

LIVERPOOL FC ACADEMY PHASE 2 GROUND INVESTIGATION REPORT

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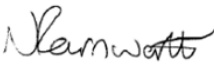
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EXECUTIVE SUMMARY

Appointment	Curtins were instructed by Rider Levett Bucknall on behalf of Liverpool FC to undertake an Intrusive ground investigation at Liverpool FC Academy, The Academy Way, Liverpool, L33 7ED. The site is centred on National Grid Reference 342370, 398490, and covers an area of approximately 5.63 Ha. It is understood that the development proposals comprise of the construction of a new indoor pitch, new show pitch with spectator stand, extension of the existing car park, extension and refurbishment of the existing Academy Building, all with associated hard and soft landscaping.
Current Site Status	The site is located in Kirkby, Knowsley and is currently occupied by the Liverpool FC Academy which comprise of two academy buildings, an indoor pitch, two outdoor pitches and a hardstanding carpark with associated soft landscaping.
Summary of Phase 1	Earliest available mapping (1850) shows the site as agricultural land, with a farm building labelled 'Fazakerley's Farm' and an orchard located at its centre, and an access track extending from the building to the northwestern boundary. 'Potter's Lane' is shown to pass through the southern corner of the site, running west to northeast. No significant changes on site occur until 1968 when the farm building, orchard and access track are no longer present. There is now part of a football ground labelled 'Kirkby Town FC' and electric substation present along the southern boundary, the rest of the site is a playing field. By 1994, mapping shows the football ground and electrical substation are no longer present. The entire site is now a playing field. By 2001 the site is now occupied by the buildings, football pitches, hardstanding car park and hard/soft landscaping associated with the Liverpool FC Academy. There is also an electric substation located along the northwestern site boundary. In 2018, a building known as the family suite was constructed to the north of the astroturf pitch. In 2023 an attenuation tank was constructed immediately south of the caretaker's yard. No further changes have occurred on site to the present day. BGS maps indicate the site to be underlain by Shirdley Hill Sands underlain by the Kinnerton Chester Formation (Sandstone). The Shirdley Hill Sands is classified as a Secondary A Aquifer, with the Chester Formation deposit classified as a Principal Aquifer.
Fieldworks Undertaken	Intrusive site investigation works were undertaken between the 10th and 21st of November 2025, and comprised 3 No. window samples, 6 No. rotary cored boreholes, 2 No. machine excavated trial pits for soakaways and 15 No. hand excavated trial pits. Ground gas and groundwater monitoring standpipes were installed in 6 No. rotary cored boreholes and 2 No. window sample boreholes. 4 No. return gas and groundwater monitoring visits have been undertaken between the 01st of December 2025 and 07th of January 2026.
Encountered Ground Conditions	Topsoil was encountered in thirteen locations from ground level to maximum depths ranging between 0.10m to 0.31m bgl (38.52m to 36.07m AOD). Topsoil was largely Localised in two locations, including the football pitch and associated soft landscaping located in the west of the site and the soft landscaping in the north of the site. Granular Made Ground was encountered either underlying Topsoil or from ground level and was recorded to maximum depths of 0.30m to 4.00m bgl (37.91m to 34.19m AOD). This deposit typically comprised of a 'greyish brown to dark brown slightly clayey gravelly sand with variable cobble content' or 'brown to dark brown fine to coarse sand'. The greatest extent of granular Made Ground soils is present along the sites northeastern and southwestern boundaries. Anthropogenic materials recorded in the granular Made Ground generally comprised of brick, concrete, sandstone, limestone, plastic, pottery and slag. Cohesive Made Ground was encountered in four locations either underlying or interbedded with granular Made Ground soils. Cohesive Made Ground was encountered from depths ranging between 0.50m to 1.30m bgl (35.93m to 35.22m AOD) with thicknesses of the deposit ranging between 0.10m and 2.20m. Deposits consistent with the Shirdley Hill Sands were encountered in four boreholes. This deposit was recorded to be underlying the Made Ground soils and was encountered from depths ranging between 0.60m and 3.00m bgl (38.02m to 33.38m AOD). The thickness of the Shirdley Hill Sands ranged between 0.20m and 1.45m. This deposit was typically described as a 'Light brown to brown slightly gravelly fine to coarse sand'; however, was recorded to contain Localised lenses of peat. Localised peat lenses were generally limited in thickness ranging between 0.20m and 0.40m and appeared to be Localised to the northern and southern extents of the site. Glacial Till was largely encountered as a cohesive deposit from depths ranging between 0.84m to 4.00m bgl (35.68m to 34.19m AOD) with thickness of cohesive Glacial Till ranging between 0.30m and 1.47m. This deposit did not appear to be Localised and was recorded to be underlying the entirety of the site dipping in a northern to southern direction. This deposit was typically described as a 'Soft to stiff brown or grey sandy, slightly gravelly occasionally silty clay'. Granular Glacial Till deposits were encountered from depths ranging between 0.50m and 4.70m bgl (36.10m and 33.49m AOD), with thicknesses ranging between 0.20m and 1.48m. This deposit was typically described as 'reddish brown, brown or grey slightly clayey, gravelly sand'. Granular soils indicative of weathered bedrock of the Chester Formation was encountered within seven No. locations immediately underlying the Glacial Till deposits encountered from depths of 1.58m to 5.05m bgl (39.94m to 33.14m AOD), with proven thicknesses ranging between 0.48m and 1.40m.

Environmental Laboratory Testing and Ground Gas Monitoring Results	With respect to the proposed end use of (Commercial) Tier 1 thresholds for human health were not exceeded in any of the samples. All soil samples were screened for asbestos with one sample being positively identified as containing asbestos HP11 at 0.3m bgl (<0.001%w/w). This is in conjunction with asbestos previously identified during the MML ground investigation (WS01 at 1m bgl (0.0025% w/w) and RBH01 at 0.5m bgl (<0.001% w/w). Minor exceedances of UK Drinking Water Standards and the World Health Organization Standards in five contaminants including Metals, and PAHs from 2 groundwater sampling locations. Risks to controlled waters from site soils are limited in nature and are unlikely to significantly benefit from either further contaminant modelling or remedial action. Evaluation of the 'borehole' scenario records a maximum Qhg of 0.0452 l/hr for carbon dioxide and maximum Qhg of 0.0056l/hr for methane , indicating a Characteristic Situation 1 (CS-1), where no gas protection measures are required for the development.
Ground Contamination and Ground Gas Assessment	A Moderate/Low risk rating is identified to site end-users and construction workers from contamination in Made Ground soils from direct contact, dermal uptake, soil and dust ingestion and inhalation. There were no exceedances of Commercial GACs; however, asbestos fibres in soils were identified during both the MML and Curtins ground investigation. containing materials have been encountered. Contractors must prepare suitable risk assessments risk assessments and methods statements, and mitigation measures which may not be limited to the use of suitable PPE and provision of suitable welfare and sanitary facilities during works. Clean capping in localised new soft landscaping may be required. A Moderate/Low risk rating is identified to controlled waters (Groundwater), and a Low risk rating is identified to controlled waters (Surface Waters) as the ground investigation encountered no olfactory, visual or gross contamination. A Low risk rating is identified to site end users from ground gases following the monitoring visits, with a CS-1 assigned to the site, the development requires no ground protection measures.
Geotechnical Assessment	Based on the required loadings and the ground conditions encountered during Curtins intrusive ground investigation shallow foundations are not considered suitable for the proposed development. Alternatively, a piled foundation solution is likely to be feasible, to transfer loads to more competent sandstone bedrock. End bearing piles socketing into the Chester Formation sandstone are likely to be a suitable foundation solution for high loads. Based on the findings of the ground investigation it is recommended that consideration is given to constructing suspended ground floor slabs, bearing on pile caps and supported by a network of beams. Based on the laboratory testing results discussed in Section 6.2.2, the cohesive Glacial Till encountered on site has a low volume change potential. 2 No. soakaways were undertaken as part of the ground investigation. Infiltration rates were determined as N/A, due to the water level remaining the same throughout the length of the test. Soakaways are not considered to be a suitable drainage strategy for the proposed development. It is known that earthworks will be required to facilitate the scheme. It is anticipated that a Cut and Fill will be required for the site. It is important that the earthworks are undertaken under an Earthworks Specification in accordance with CC 601 Earthworks Guidance. The preliminary design of buried concrete according to Table C2 of BRE Special Digest 1:2005 should be in accordance with the classification as DS-1 and ACEC Class AC-2z.
Recommendations	Based on the findings of the ground investigation, the following recommendations are made: • Construction workers to be provided with appropriate PPE and sanitary facilities with reference to environmental testing certificates appended herein. • Adopt an Asbestos Management Plan during groundworks and construction works. • Clean capping layer installed in Localised soft landscaping areas. • It is recommended that an Earthworks Specification is undertaken once final cut and fill volumes have been finalised. • It is recommended that a specialist piling contractor is consulted to assess the suitability of a piled foundation solution for the proposed development.

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INTRODUCTION

1.1 Project Background

Curtins were instructed by Rider Levett Bucknall on behalf of Liverpool FC to undertake an Intrusive ground investigation at Liverpool FC Academy, The Academy Way, Liverpool, L33 7ED. The site is centred on National Grid Reference 342370, 398490, and covers an area of approximately 5.63 Ha.

It is understood that the development proposals comprise of the construction of a new indoor pitch, new show pitch with spectator stand, extension of the existing carpark, extension and refurbishment of the existing Academy Building, all with associated hard and soft landscaping.

A proposed site plan is included in *Appendix A*.

1.2 Scope of Services

This investigation aims to characterise the geo-environmental and geotechnical conditions for the proposed works.

Specifically, the Phase 2 report is intended to determine:

- a) If there is a risk of the proposed end user being adversely impacted upon by potential contamination in shallow site soils that may be present on the site due to its known current, recent and historical use;
- b) If there is a risk of groundwater and/or surface water being adversely impacted upon by potential contamination that may be present on the site due to its known current, recent and historical use;
- c) If there is a risk to the end user from soil gases including methane, carbon dioxide, carbon monoxide and hydrogen sulphide; and,
- d) Likelihood of the proposed works being adversely impacted by potential geo-hazards across the site.

In addition, engineering recommendations for the proposed development comprising of a new indoor pitch, new show pitch with spectator stand, extension of the existing carpark, extension and refurbishment of the existing Academy Building, all with associated hard and soft landscaping , , will be provided in the final report.

Detailed flood risk assessment, ecology and archaeological studies are outside the scope of this report.

2 PHASE 1 PRELIMINARY SITE ASSESSMENT SUMMARY

This section presents a summary of the current site setting, history, geology, and hydrogeology/hydrology, previously detailed in the Phase 1 Preliminary Risk Assessment Report (Ref. 1). As such, it is advised that this report is read in conjunction with the Phase 1 Preliminary Risk Assessment Report (Ref. 1). A summary of the pertinent Phase 1 Preliminary information specifically for the proposed development site is presented in the following sub-sections.

This information will feed into the geotechnical assessment (refer to Section 6.0) and geo-environmental risk assessments (refer to Section 7.0).

2.1 Current Setting

The site is located in Kirkby, Knowsley and is currently occupied by the Liverpool FC Academy which comprises of two academy buildings, an indoor pitch, two outdoor pitches and a hardstanding carpark with associated soft landscaping.

The site is irregularly shaped and covers an approximate area of 5.63 Ha.



Figure 1 – Site Location Plan (site boundary shown in Red)

The site surrounding land use is summarised in Table 1.

Table 1 – Surrounding Area

Surrounding Area	N	The northern boundary of the site is marked by soft landscaping and an access track into the wider Liverpool FC Training Grounds, beyond which football pitches are present.
	E	The eastern boundary of the site is marked by soft landscaping and vegetation. Arbour Lane is present just beyond the boundary, followed by an industrial park development.
	S	The southern boundary of the site is marked by soft landscaping and vegetation. Commercial developments are present just beyond the boundary, followed by County Road (A5208).
	W	The western boundary of the site is marked by soft landscaping and vegetation. Simonswood Lane is present just beyond the boundary, followed by a residential development.

2.2 Previous Site Use

A review of the available historical map information for the site, as presented within the Phase 1 Preliminary Risk Assessment Report (Ref. 1) has been undertaken with specific reference to potential sources of contamination and geohazards.

Earliest available mapping (1850) shows the site as agricultural land, with a farm building labelled 'Fazakerley's Farm' and an orchard located at its centre, and an access track extending from the building to the northwestern boundary. 'Potter's Lane' is shown to pass through the southern corner of the site, running west to northeast.

No significant changes on site occur until 1968 when the farm building, orchard and access track are no longer present. There is now part of a football ground labelled 'Kirkby Town FC' and electric substation present along the southern boundary, the rest of the site is a playing field.

By 1994, mapping shows the football ground and electrical substation are no longer present. The entire site is now a playing field. By 2001 the site is now occupied by the buildings, football pitches, hardstanding car park and hard/soft landscaping associated with the Liverpool FC Academy. There is also an electric substation located along the northwestern site boundary.

In 2018, a building known as the family suite was constructed to the north of the astroturf pitch. In 2023 an attenuation tank was constructed immediately south of the caretaker's yard.

No further changes have occurred on site to the present day.

2.3 Published Geology

A review of the Curtins' Phase 1 Report (Ref 1), indicates the following geological sequence:

- Shirdley Hill Sands Alluvium (Superficial); and
- Chester Formation (Bedrock)

2.3.1 Made Ground Deposits

The BGS maps indicate Made Ground soils underlying the southeast of the site. Given the phases of construction that have taken place on site it is considered likely that Made Ground soils may underlie its entirety.

2.3.2 Superficial Deposits

Superficial deposits are recorded as the Shirdley Hill Sands comprising of moderately to well sorted coastal blown sands with layers of peat in its lower part.

2.3.3 Bedrock Deposits

Bedrock deposits are indicated to comprise the Chester Formation, comprising cross bedded, pebbly sandstone with subordinate beds of sandstone.

2.3.4 Mining and Quarrying

The Curtins Phase 1 Report (Ref 1), confirmed that the site is not located within a coal mining reporting area and as such the risk from historic coal mining has not been considered further.

There is one BGS recorded mineral site located within 250m of the site associated with the extraction of sandstone; however. Extraction has ceased and it is not considered to pose risk to the proposed development.

2.3.5 Other Pertinent Existing Geological Records

There are no BGS recorded faults either onsite or within 150m of the site.

Ground stability hazards are generally of no hazard to very low hazard on site, a low potential for running sands is noted onsite, likely associated with the Shirdley Hill Sands noted on BGS mapping.

2.4 Hydrogeology and Hydrology

The Shirdley Hill Sands deposit is classified as a Secondary A Aquifer, defined as:

“Secondary A Aquifers comprise permeable layers that can support local water supplies, and may form an important source of base flow to rivers.”

The Chester Formation deposit is classed as a Principal Aquifer, defined where:

“Strategically important rock units that have high permeability and a high water storage capacity.”

The site is located within a Zone III Source Protection Zone.

The nearest surface water feature is recorded to be an inland river located c. 680m north of the site.

2.5 Landfill & Pollution

There are no Historical or BGS Recorded Landfill sites located within 250m of the site.

There are two licenced waste management facilities within 250m of the site boundary. The closest of which is located 94m east of the site, the category is not supplied.

There are two Local Authority Pollution Prevention and Control Permits located within 250 m of the site. The closest record is located 156 m east of site for mobile screening and crushing processes (PG3/16).

2.6 Previous Reports

A ground investigation report has been made available to Curtins for review undertaken across the wider LFC training ground site including the development of the AXA training centre to the north. Specific information pertaining to the LFC Academy development area have been extracted from the report and is summarised below.

It is understood that no reliance can be placed on this information.

2.6.1 Proposed Training Campus for Liverpool Football Club and Enhancements, Mott Macdonald (May 2017)

Mott Macdonald Ltd (MML) were commissioned by Liverpool Football Club and Athletic Grounds Ltd (LFC) to design and interpret an intrusive ground investigation in 2017 to provide ground data and supporting information to support redevelopment of the club's training ground at Kirkby in the metropolitan borough of Knowsley in Merseyside.

Relevant ground investigation data used within MML's interpretative assessment pertaining to the Liverpool FC Academy development site is summarised below.

2.6.1.1 Ground Conditions Encountered

The most relevant exploratory hole locations under the proposed indoor pitch have been reviewed. Made ground was encountered to a maximum depth of 4.70 m bgl and typically comprised granular material with demolition debris, some locations also encountered cohesive material with demolition debris. Beneath the Made Ground, two natural granular deposits occur Glaciofluvial Sand (reddish brown with ~15% subangular gravel) and completely Weathered Sandstone derived from bedrock. Sandstone bedrock was confirmed at 1.40 m bgl (35.06 m AOD) at the in the northwest corner and approximately 5.10 m bgl (33.11 m AOD) in the southeast corner of the proposed indoor pitch.

Groundwater levels with a response zone in the sandstone bedrock had levels stable levels varying from 5.20 m bgl (33.01 m AOD) to 2.70 m bgl (33.80 m AOD), indicating the groundwater table is situated near the surface of the underlying sandstone bedrock. The monitoring point with a response zone in granular Made Ground had groundwater levels fluctuating between 1.50 m bgl (34.96 m AOD) and 1.90 m bgl (34.96 m AOD) indicating a locally higher groundwater level, probably water percolating downwards from the ground surface perched on clay horizons within Made Ground.

2.6.1.2 Pertinant Findings

Analysis of the soils by MML identified asbestos within two locations. No other exceedances of relevant screening criteria were identified.

Screening values were calculated from measured methane and carbon dioxide concentrations in keeping with BS 8485. Most screening values fell were constantly below 0.07 l/hr. Screening values calculated from the concentration and flows measured during the first round of monitoring did yield screening values of 0.180 and 0.07 l/hr. However, these values were not maintained over subsequent monitoring visits, and the ground is therefore not considered to be actively gassing. From the overall trend in Gas Screening Values, the Characteristic Situation of the site was considered to be Characteristic Situation 1 (CS1) by MML.

No exceedances were identified in groundwaters sampled within the area of the development site. However, a number of exceedances of UKDWS and EQS detection limits along with other contaminants were identified in leachates and groundwaters across the wider site. An examination of the contaminants and results has shown that risks to controlled waters from site soils are limited in nature and are unlikely to significantly benefit from either further contaminant modelling or remedial action. The majority of the generally low-level leachable contaminants were identified across the site within Made Ground Deposits and topsoil with no specific historic or, current point source identified.

A Detailed UXO risk assessment was procured by MML and concluded a high risk from UXO on site. This considers an elevated risk from German UXO and allied UXO.

2.6.1.3 Conclusions and Recommendations

Minor exceedances were encountered against risks to Controlled Waters. Removal of Made Ground from the site was not considered sustainable or cost-beneficial for the risks identified by MML.

MML recommended that specialist advice should be sought regarding the significance and appropriate mitigation of the asbestos identified within two exploratory locations in the Proposed Indoor Pitch Area.

Risk from unexploded ordnance was flagged a high due to bombing raids on the Royal Ordnance Factory Kirkby that took place during WWII. Risks to ground investigation operatives were mitigated by the use of magnetometer techniques within boreholes pre-empt detect buried metallic bodies. No anomalies were identified.

2.7 Unexploded Ordnance (UXO) Risk Assessment

It should be noted that the following assessment is only applicable to the Curtins Ground Investigation described in this report only. Where the client is looking to determine the risk from UXO throughout the entire enabling works and development, the Principal Contractor appointed for the enabling and construction works must obtain their own Detailed UXO Risk Assessment Report to advise their specific works.

UXO Risk Mapping indicates that the risk posed by UXO associated with WW2 bombing to be **High-Risk** within the site. Areas designated as High-Risk are those that shows a bombing density of 50 bombs per 1000 acre or more. This assessment accounts for the following:

- *ROF Kirkby* was situated partially on-site and immediately east and would have been considered a primary bombing target during WWII
- ARP recorded bomb strikes on site and within the surrounding area, and the proximity to *ROF Kirkby*.
- Since WWII, Ordnance has been discovered within close proximity to the Study Site and it is considered probable that they were linked to *ROF Kirkby*. Additional ammunition may have been deliberately buried.
- Since WWII, several buildings have been constructed on site. It is likely that any UXO within the structural footprint of post-war buildings would have been discovered and removed, however, the potential for UXO to be present below existing foundations and within undeveloped areas is assessed to remain extant.

In relation to ground investigation works, the report made a number of risk mitigation recommendations including:

- i) UXO risk management plan.
- ii) UXO safety awareness briefings
- iii) EOD banksman support.
- iv) Magnetometer survey.

If unexploded ordnance is discovered during any works, stop immediately, prevent access to the area, and inform the police. If the site boundary or location changes then the UXO risk should be reassessed.

2.8 Summary of Phase 1 PCSM

A summary of potential pollutant linkages at the development site identified in the Phase 1 Preliminary Risk Assessment Report (Ref. 1) presented in Table 2, were identified as requiring further investigation to enable the safe redevelopment of the site.

Table 2 – Summary of Phase 1 PCSM

Potential Source	Pathway	Receptor	PCL	Risk
Potential for uncontrolled deposition of Made Ground associated with local construction works.	Direct contact, ingestion, inhalation (dust and vapours).	End User of Site (Residents)	1	Moderate/Low
		Adjacent Site Users	2	Low
Potential for Localised fuel spills and leakages associated with hard standing carparks and roads located onsite.	Vertical migration through superficial deposits.	Controlled Waters (Groundwater)	3	Low
	Horizontal migration over and through superficial deposits.	Controlled Waters (Surface Water)	4	Low
Onsite and offsite soils with the potential to generate ground gases.	Vertical and horizontal migration through existing service corridors and the underlying superficial deposits.	End User of Site (Residents)	5	Low

Potential contaminants of concern associated with the sources identified within the Conceptual Site Model include but are not limited to: broad range aliphatic and aromatic hydrocarbons present within any fuel oils; polycyclic aromatic hydrocarbons (PAHs); inorganic compounds including heavy metals; asbestos present in discarded building materials and Made Ground.

Potential contaminants associated with the airborne dust/particulates include but are not limited to: polycyclic aromatic hydrocarbons and inorganic compounds including toxic metals that are also accounted for by potential onsite contaminants of concern.

The qualitative risk assessment determined PCL 1 associated with the proposed development of the site warrant further investigation. Confirmatory investigation/assessment was also recommended for PCL 2-5.

It was recommended that a ground investigation is conducted to both confirm this assessment and provide data in support of the structural and civil engineering design. The scope of the investigation undertaken in detailed in *Section 3.0*.

3 PHASE 2 INVESTIGATION SCOPE OF WORKS

Site investigation works were undertaken between the 10th and 21st of November 2025.

The scope of the ground investigation was designed in general accordance with current UK guidance including LCRM (Ref. 3), BS10175 (Ref. 4), BS5930:2020 (Ref. 5) and BSEN1997-2:2007 Eurocode 7 (Ref. 6).

The scope and rationale are summarised in *Table 3*.

Table 3 – Scope of Works

Exploratory Hole Type	Exploratory Hole Reference	Exploratory Hole Depth (m bgl)	Rationale
Window Sample Boreholes	WS01 WS02 WS03	4.45 3.45 2.50	Confirm shallow ground conditions. Collect soil samples for chemical and geotechnical testing. Undertake in-situ testing. Install boreholes for gas and groundwater monitoring.
Rotary Borehole	RBH01 RBH02 RBH03 RBH04 RBH05 RBH06	14.00 14.00 15.50 4.45 3.85 15.50	Confirm shallow and deep ground conditions. Collect soil samples for chemical and geotechnical testing. Undertake in-situ testing. Install boreholes for gas and groundwater monitoring
Hand Excavated Trial Pits	HP01 HP02 HP03 HP04 HP05 HP06 HP07 HP08 HP09 HP10 HP11 HP12 HP13 HP14 HP15	1.00 1.00 1.00 0.60 1.00 1.00 1.00 0.80 0.85 0.65 1.00 0.30 1.20 1.10 1.20	Confirm shallow ground conditions. Confirm dimensions of existing foundations. Collect soil samples for chemical and geotechnical testing. Carry out TRL DCP Tests in selected locations to derive approximate CBR.
Soakaways in Machine Excavated Trial Pits	SA01 SA02	1.20 1.40	Confirm shallow ground conditions. Facilitate BRE 365 soakaway testing.

Potential sources of on-site contamination are further discussed in *Section 7.0*.

3.1 Soil Logging and Sampling

Exploratory borehole arisings were logged on site by a qualified Engineer. All exploratory holes were logged in accordance with the requirements of BS5930:2015 (Ref. 7) including recording observed visual and olfactory indications of contamination. Exploratory hole logs are provided in *Appendix B*.

3.2 Monitoring Well Installations

Ground gas and groundwater monitoring slotted 50 mm diameter pipes were installed within 8 No. window sample boreholes.

A bentonite seal was placed above and below the screened section of the borehole to minimise potential for downward migration of contaminants and the creation of a preferential migratory pathway. A gravel aggregate surround was installed in the annulus between the sides of the borehole and the slotted sections of pipe. The monitoring wells were primarily designed to assess the potential for ground gas and water monitoring.

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The installed response zones are summarised in *Table 4* below.

Table 4 – Monitoring Well Response Zones

Exploratory Hole Ref	Response Zone(s) m bgl (m AOD)	Strata Description
WS01	1.00– 3.00 (35.38 – 32.38)	Made Ground
WS02	2.50 – 3.00 (34.02 – 33.52)	Shirdley Hill Sands
RBH01	0.60 – 1.40 (36.95 – 36.15)	Made Ground
RBH02	5.00 – 9.00 (33.10 – 29.10)	Chester Formation
RBH03	8.00 – 15.50 (30.82 – 23.32)	Chester Formation
RBH04	1.50 – 2.00 (37.95 – 37.45)	Shirdley Hill Sands
RBH05	0.80 – 1.80 (37.82 – 36.82)	Shirdley Hill Sands
RBH06	1.00– 3.50 (37.19 – 34.69)	Made Ground

Copies of borehole logs can be referred to in *Appendix B* of this report.

3.3 Post Investigation Monitoring

3.3.1 Ground Gas and Groundwater Monitoring

Four gas and groundwater level monitoring visits have been undertaken between the 01st of December 2025 and 07th of January 2026 to assess the groundwater and gas conditions as identified in the Preliminary Conceptual Site Model in *Section 2.8*.

4 LABORATORY ANALYSIS

Representative soil samples were selected for laboratory geotechnical and chemical testing, based on field observations, to inform the proposed works.

Selected environmental soil samples were placed in laboratory provided containers and stored in cool boxes prior to being transported to the nominated laboratory under the laboratory's chain of custody documentation. The laboratories selected by Curtins for chemical analysis was Envirolab (UKAS and MCERTS accredited), and for geotechnical analysis was i2 Analytical (UKAS and MCERTS accredited).

Sampling positions were generally located in a non-targeted, systematic array to give adequate and representative coverage of the site's proposed end use and the immediate environmental setting.

4.1 Environmental Chemical Analysis

The contaminants of concern potentially present on the site were considered to include, amongst others; organic matter, fill, hydrocarbons (e.g. fuel/oils) the extent of which is captured by the broad environmental testing suite listed in Table 5.

Table 5 – Environmental Chemistry Analysis Suite: Soils

Suite Ref	Analyte	LOD
Soils Suite A	Asbestos Screen, pH and Soil Organic Matter (SOM)	% w/w, pH, % w/w
	Arsenic, Chromium, Chromium VI, Copper, Lead, Selenium, Zinc, Nickel	1 mg/kg
	Boron (water soluble)	1 mg/kg
	Cadmium	1 mg/kg
	Mercury	0.17 mg/kg
	Cyanide (total)	1 mg/kg
	Phenols (screen)	0.2 mg/kg
	PAHs (USEPA 16)	0.01 to 0.08 mg/kg
	TPH (Aro/Alk Split)	0.01 to 1 mg/kg
	BTEX	0.01 mg/kg
	Water Soluble 2:1 Sulphate	0.01 g/l

A total of seven samples were obtained during the ground investigation including five No. samples of Made Ground soils and two No. samples of natural soils.

4.2 Groundwater Analysis

The Preliminary CSM (Ref. 1) has shown a Low risk to controlled waters however made recommendations to undertake supplementary groundwater monitoring to confirm conclusions made by MML.

Groundwater samples were collected from selected boreholes during rounds of groundwater monitoring. Water samples were tested for a suite in line with that identified for soils given the source material identified and strata. These are listed within *Table 6* below.

Table 6 – Environmental Chemistry Analysis Suite: Waters

Suite Ref	Analyte		LOD
Water Suite A	Miscellaneous Contaminants	pH	-
		Cyanide (Total)	0.005 mg/l
		Ammoniacal nitrogen as NH ₄	0.05 mg/l
		Thiocyanate, , Nitrate	0.1 mg/l
		Sulphate, Sulphide, Dissolved Organic Carbon	0.1 – 2 mg/l
	Metals	Arsenic, Calcium, Chromium, Selenium	1 µg/l
		Boron	10 µg/l
		Nickel, Zinc	2 µg/l
		Copper	4 µg/l
		Lead, Mercury	0.1 µg/l
		Cadmium	0.2 µg/l
	PAHs (USEPA16)		0.01 µg/l
	TPH (Aro/Ali Split)		1 – 10 µg/l

A total of two water samples were obtained from monitoring wells. Copies of the environmental chemistry testing certificates are presented in *Appendix D*.

4.3 Geotechnical Analysis

Soil samples for testing were prepared in accordance with BS1377: Part 1:2016 (Ref. 8). The geotechnical testing undertaken is summarised in *Table 7*.

Table 7 – Geotechnical Testing Soils

Test Type.	Quantity	Standard
In Situ Testing		
Standard Penetration Test	29	BS 5930: 2015+2020, (Clause 41).
Laboratory Testing		
pH	24	BS1377 1990, Part 3 (Clause 9.4 & 9.5).
Water Soluble Sulphate 2:1 SO ₄	24	BS1377 1990, Part 3 (Clause 5.3 & 5.5).
Moisture Content	9	BS EN ISO 17892-1:2014+A1:2022, BS 1377-2: 2022, (Clause 4.1).

Atterberg 4 Point	9	BS EN ISO 17892-12:2018+A2:2022 (Clause 5.3 and 5.5), Fall Cone Method, 4 Pt Test, BS 1377-2:2022, (Clause 5.2 and 6). W by BS EN ISO 17892-1:2014+A1:2022.
Particle Size Distribution	7	BS EN ISO 17892-4:2016, BS 1377-2:2022 (Clause 10).
Point Load Test	44	ISRM 1974-206
Unconfined Compressive Strength Test	6	ISRM 1974-206

The results of the geotechnical testing are summarised in *Section 6.0* of this report. Copies of the geotechnical testing certificates are presented in *Appendix D*.

5 GROUND CONDITIONS

The ground conditions across the site, determined during the Curtins 2025 ground investigation works, generally comprises surface covering of either Topsoil, hardstanding or Made Ground soils. This was generally underlain by granular Made Ground soils with localised cohesive Made Ground. Superficial soils, where encountered, generally comprised of Granular or cohesive Glacial Till with localised Shirdley Hill Sand deposits. Bedrock was confirmed to comprise of sandstone consistent with the Chester Formation.

5.1 General

A summary of the ground conditions encountered during the site investigation works is presented in Table 8, with detailed information presented in the exploratory hole logs included in *Appendix B*.

Table 8 – Summary of Ground Conditions Encountered

Strata	Depth to Top of Strata	Recorded Thickness (m)		Description
	m bgl (m AOD)	Min	Max	
Topsoil	Ground Level (GL) (36.28 – 39.45)	0.10	0.31	Grass cover over brown fine to coarse medium sand with rootlets.
Made Ground	GL – 1.30 (35.22 – 39.33)	0.10	3.70	Greyish brown to dark brown slightly clayey gravelly sand with variable cobble content. And/or Brown to dark brown fine to medium sand. And/or Light to dark brown occasionally black sandy gravelly clay. And/or Concrete or concrete paving slab, tarmac or brick paving.
Shirdley Hill Sands	0.60 – 3.00 (38.02 – 33.38)	0.20	1.45	Light brown to brown slightly gravelly fine to coarse sand. And/or Brown organic clay with fragments of wood and plant matter (peat).
Glacial Till	0.40 – 2.15 (36.03 – 37.30)	0.20*	3.20	Reddish brown, grey or brown slightly clayey gravelly sand. And/or Soft to stiff brown or grey sandy slightly gravelly occasionally silty clay.
Chester Formation	2.23 – 5.05 (35.32 – 36.25)	1.25*	11.77*	Very dense reddish brown slightly clayey fine to coarse sand. And/or Weak to medium strong reddish-brown sandstone.

*Base of stratum not encountered.

5.2 Topsoil

Topsoil was encountered in thirteen locations from ground level to maximum depths ranging between 0.10m to 0.31m bgl (38.52m to 36.07m AOD). Topsoil was largely localised in two areas, including the football pitch and associated soft landscaping located in the west of the site and the soft landscaping in the north of the site. Topsoil was generally encountered as a '*brown fine to coarse medium sand with frequent rootlets*'.

5.3 Made Ground

Made Ground soils were encountered in all exploratory hole locations excepting WS03 and generally comprised of granular Made Ground soils with localised cohesive deposits.

5.3.1 Granular Made Ground

Granular Made Ground was encountered either underlying Topsoil or from ground level and was recorded to maximum depths of 0.30m to 4.00m bgl (37.91m to 34.19m AOD). This deposit typically comprised of a *'greyish brown to dark brown slightly clayey gravelly sand with variable cobble content'* or *'brown to dark brown fine to coarse sand'*. The greatest extent of granular Made Ground soils is present along the sites northeastern and southwestern boundaries. Anthropogenic materials recorded in the granular Made Ground generally comprised of brick, concrete, sandstone, limestone, plastic, pottery and slag.

5.3.2 Cohesive Made Ground

Cohesive Made Ground was encountered in four locations (HP08, WS01, WS02 and RBH04), either underlying or interbedded with granular Made Ground soils. Cohesive Made Ground was encountered from depths ranging between 0.50m to 1.30m bgl (35.93m to 35.22m AOD) with thicknesses of the deposit ranging between 0.10m and 2.20m.

5.4 Shirdley Hill Sands

Deposits consistent with the Shirdley Hill Sands were encountered in **four** boreholes (**WS01, WS02, RBH04 and RBH05**). This deposit was recorded to be underlying the Made Ground soils and was encountered from depths ranging between 0.60m and 3.00m bgl (**38.02m and 33.38m AOD**). The thickness of the Shirdley Hill Sands ranged between 0.20m and 1.45m. This deposit was typically described as a *'Light brown to brown slightly gravelly fine to coarse sand'*; however, was recorded to contain localised lenses of peat (WS01 and RBH04). Localised peat lenses were generally limited in thickness ranging between 0.20m and 0.40m and appeared to be localised to the northern and southern extents of the site. Peat was typically described as a *'brown organic clay with fragments of wood and plant matter'*.

5.5 Glacial Till

Superficial deposits indicative of Glacial Till was encountered in eleven No. locations, either underlying the Made Ground or Shirdley Hill Sand deposits. Glacial Till was encountered from depths ranging between 0.40m and 2.15m bgl (36.03m to 37.30m AOD).

5.5.1 Cohesive Glacial Till

Glacial Till was largely encountered as a cohesive deposit from depths ranging between 0.84m to 4.00m bgl (35.68m to 34.19m AOD) with thickness of cohesive Glacial Till ranging between 0.30m and 1.47m. This deposit did not appear to be localised and was recorded to be underlying the entirety of the site dipping in a northern to southern direction. This deposit was typically described as a *'Soft to stiff brown or grey sandy, slightly gravelly occasionally silty clay'*.

5.5.2 Granular Glacial Till

Granular Glacial Till deposits were encountered from depths ranging between 0.50m and 4.70m bgl (36.10m and 33.49m AOD), with proven thicknesses ranging between 0.20m and 1.48m. This deposit was typically described as *'reddish brown, brown or grey slightly clayey, gravelly sand'*.

5.6 Chester Formation

5.6.1 Weathered Bedrock

Granular soils indicative of weathered bedrock of the Chester Formation were encountered within six No. locations immediately underlying the Glacial Till deposits encountered from depths of 2.23m to 5.05m bgl (35.32mm to 33.14m AOD), with proven thicknesses ranging between 0.48m and 0.67m.

These soils were typically described completely weathered sandstone recovered as *'very dense reddish brown gravelly coarse sand with occasional bands of grey sand. Gravel is fine to coarse subangular sandstone'*.

5.6.2 Competent Bedrock

Bedrock deposits indicative of the Chester Formation was encountered in five No. locations (RBH01, RBH02, RBH03, RBH04 and RBH06).

This deposit was described as a weak to medium strong reddish-brown sandstone.

5.7 Obstructions Encountered

Two obstructions were encountered during this ground investigation details of which are included below:

- HP08 – Concrete obstruction recorded between 0.79m to 0.80m bgl (35.64m to 35.63m AOD).
- HP12 - Concrete obstruction recorded between 0.29m to 0.30m bgl (37.92m to 37.91m AOD).

The full extent of concrete obstructions was not confirmed during the ground investigation.

5.8 Groundwater

No groundwater strikes were encountered during the ground investigation. It should be noted that rotary boreholes were drilled using water flush preventing the possibility of recording water strikes.

Return groundwater monitoring is ongoing, the results will be presented in a final report.

5.9 Observed Potential Contamination

No olfactory or visual evidence of contamination was encountered during the site investigation.

6 GROUND MODEL

6.1 Topsoil & Made Ground

Due to the variable nature of the Topsoil and Made Ground in terms of strength and composition, this layer is not deemed to be a suitable founding stratum. As such, limited geotechnical testing was undertaken on this stratum and characteristic geotechnical design parameters have not been derived.

The Geotechnical test results recorded within the Topsoil/Made Ground are summarised in Table 9 below.

Table 9 – Summary of Geotechnical Test Results – Topsoil/Made Ground

Parameter	No. of Tests	Results	
		Min	Max
In Situ Tests			
SPT N ₆₀	8	4	29
Laboratory Tests – General			
pH ¹	6	7	8.41
Water Soluble Sulphate (mg/l) ¹	6	10	80

(1) Results included from Environmental Testing

6.2 Shirdley Hill Sands

The Geotechnical test results recorded within the Shirdley Hill Sands are summarised in Table 10 below.

Table 10 – Summary of Geotechnical Test Results – Topsoil/Made Ground

Parameter	No. of Tests	Results	
		Min	Max
In Situ Tests			
SPT N ₆₀	1	7	
Laboratory Tests – General			
pH ¹	3	4.6	8.4
Water Soluble Sulphate (mg/l)	3	10.5	364

One SPT test was undertaken within the Shirdley Hill sands which recorded a SPT N₆₀ result of 7 at 2.00m bgl (37.45m AOD). This classifies the granular soil as loose in accordance with BS 5930:2015+A1:2020.

The SPT N₆₀ results have been plotted against elevation in Figures 1.

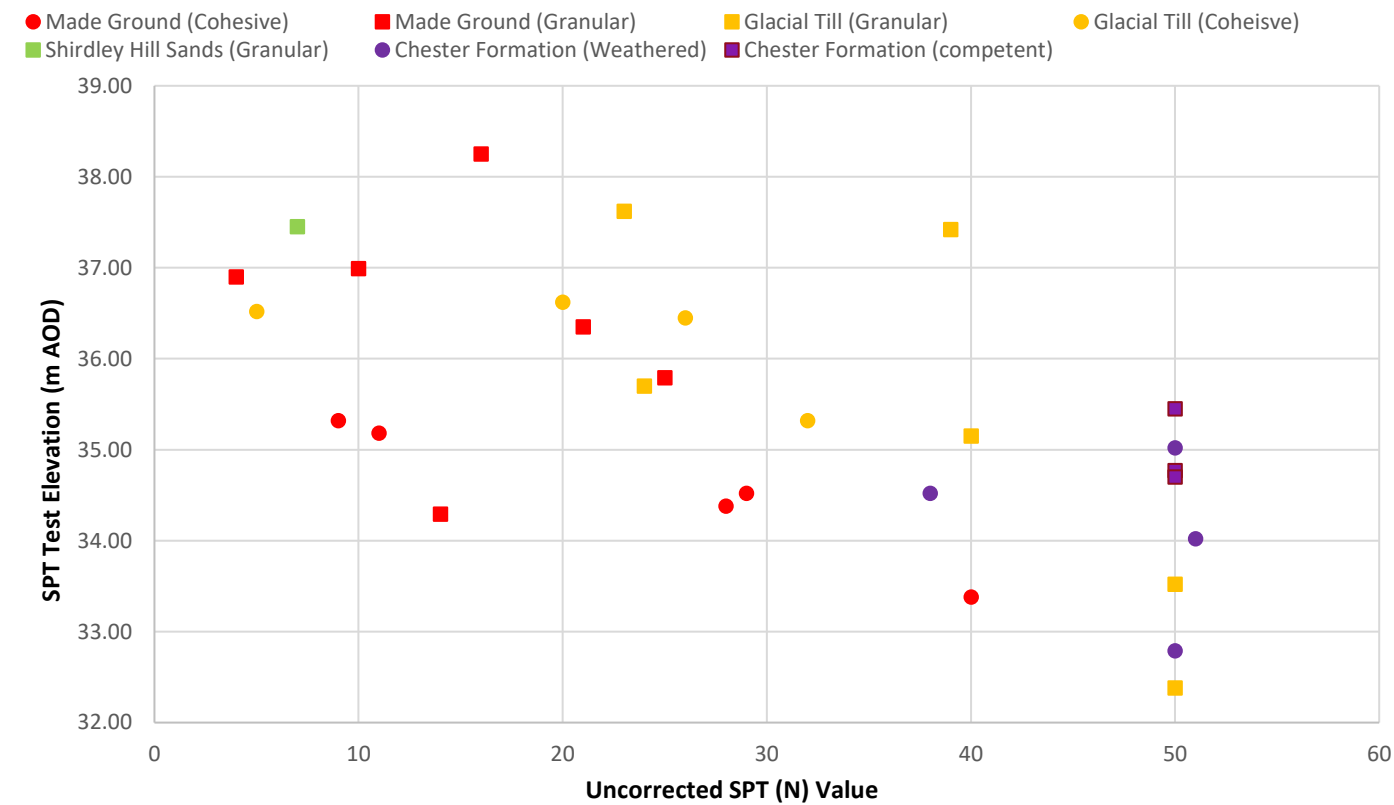


Figure 2 – Uncorrected SPT N versus Elevation (m AOD) Plot (All Stratum)

6.3 Glacial Till Deposits

Superficial deposits indicative of Glacial Till was encountered in 11no. locations from depths ranging between 0.40m and 2.15m bgl (36.03m to 37.30m AOD).

The Geotechnical test results recorded within the Glacial Till deposits are summarised in Table 11 below.

Table 11 – Summary of Geotechnical Test Results – Glacial Till Deposits

Parameter		No. of Tests	Results	
			Min	Max
In Situ Tests				
SPT N ₆₀		10	5	50
Laboratory Tests – General				
Atterberg Tests	Liquid Limit (%)	8	21	35
	Plastic Limit (%)	8	12	15
	Plasticity Index (%)	8	8	21
	Modified Plasticity Index (%)	8	9	20
Water Content (%)		8	12	19
Particle Size Distribution Tests		6	See Figure 1	

Parameter	No. of Tests	Results	
		Min	Max
pH	10	5.6	8.07
Water Soluble Sulphate (mg/l)	10	5.08	51

6.3.1 Granular Glacial Till

The SPT N_{60} results for granular Glacial Till deposits indicate a variable stratum, with N_{60} values ranging between 23 and 40 (discounting 2 No. refusals >50 on suspected cobbles). The SPT N_{60} results are presented on *Figure 2* and suggest a medium dense to dense deposit.

The Angle of Shearing Resistance (ϕ') in granular soils can be determined from SPT N_{60} after Peck, Hanson and Thornburn (1963). Based on this relationship for an SPT N_{60} value of 5 a characteristic ϕ' of 37° is determined.

A characteristic Weight Density (g_k) of 17kN/m^3 is recommended based on a medium dense sand above the groundwater table and 19kN/m^3 below the water table. (BS 8004:2015+A1:2020).

Six Particle Size Distribution tests were undertaken on the granular Glacial Till deposits the results of which are presented in *Figure 3*. The results of the testing generally confirmed that the soils were of a similar nature to those described in the exploratory hole logs.

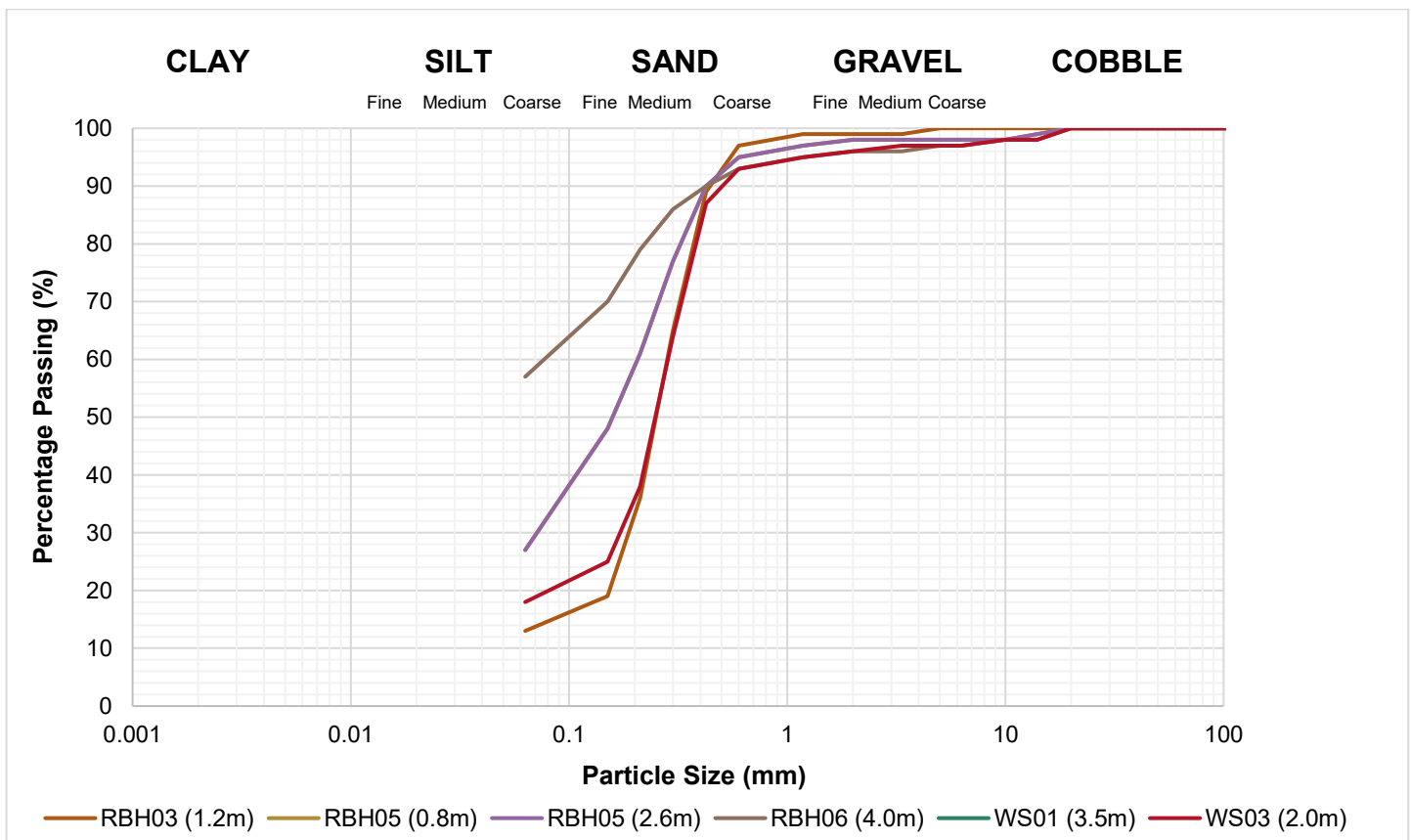


Figure 3 – Particle Size Distribution Chart (Granular Glacial Till)

6.3.2 Cohesive Glacial Till

The SPT N_{60} results for cohesive Glacial Till deposits indicate a variable stratum, with N_{60} values ranging between 5 and 32. The SPT N_{60} results are presented on *Figure 2*.

A total of eight Atterberg Tests were undertaken within the cohesive Glacial Till deposits and the results suggest that the clay is of low plasticity and has a low volume change potential in accordance with guidance from NHBC Standards Chapter 4.2 (Ref. 9). The results of the Atterberg Limits are presented on *Figure 5*.

The undrained shear strength (c_u) of the cohesive Glacial Till has been determined by laboratory testing and estimated through the relationship between SPT N_{60} Values and Plasticity Indices (after Stroud, 1975, Ref. 11) as presented in Equation 1:

$$c_u = SPT N_{60} \cdot f_1 \quad \text{[Equation 1]}$$

Where:

$SPT N_{60}$ is Characteristic Corrected Standard Penetration Test Value

f_1 is the Stroud factor

In the absence of an SPT Energy Ration Certificate, uncorrected SPT N has been used to determine c_u instead of SPT N_{60} .

A Stroud factor f_1 value of 6 was chosen for an average PI of 11. Therefore, for SPT N_{60} values between 5 and 32, estimated c_u values range between 30 kPa (low strength) and 192 kPa (very high strength). The relationship between clay strength and elevation is presented in *Figure 4*.

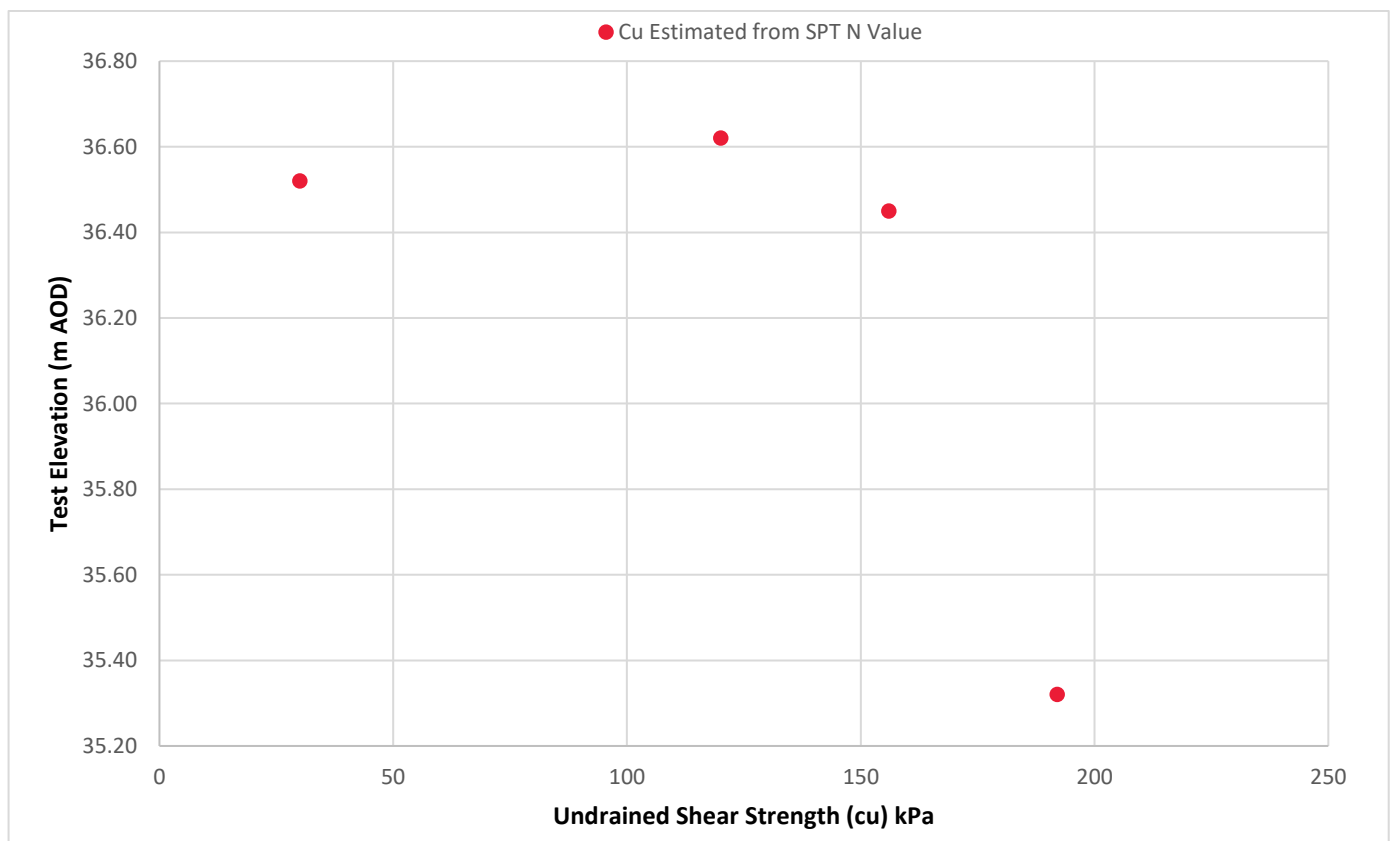


Figure 4 – Estimated Undrained Shear Strength vs Elevation (m AOD) (Cohesive Glacial Till)

Based on the strength of the clay, conservative Weight Densities (γ_k) of 17kN/m³ (above the groundwater table) and 18kN/m³ (below the groundwater table) are recommended based on BS 8004:2015+A1:2020.

A characteristic angle of shearing resistance (ϕ') can be estimated from Plasticity Index after Terzaghi, Peck and Mesri, 1996 (Ref. 10.). Based on the average Modified Plasticity Index of 11%, a characteristic ϕ' of 29° is recommended for the Cohesive Glacial Till.

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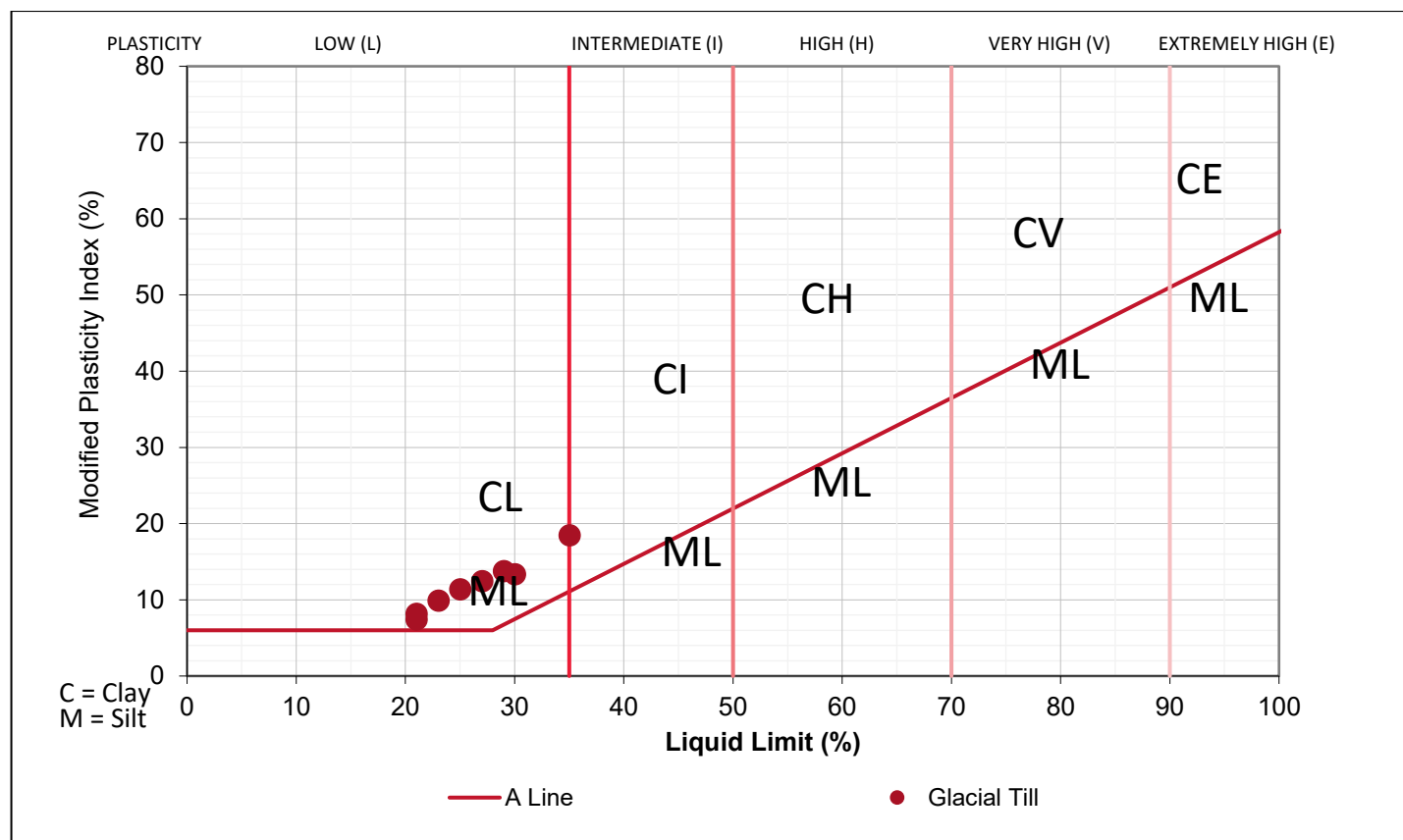


Figure 5 – Casagrande Chart (Cohesive Glacial Till)

6.4 Chester Formation (Sandstone)

Weathered Chester Formation sandstone was encountered from depths ranging between 2.23m to 5.05m bgl (35.93m to 35.22m AOD) with competent bedrock encountered from 2.90m to 5.53m bgl (34.65m to 32.66m AOD).

The geotechnical test results recorded within this stratum are summarised below in *Table 12*.

Table 12 – Summary of Geotechnical Test Results – Chester Formation

Parameter	No. of Tests	Results	
		Min	Max
Laboratory Tests – General			
pH	4	4.5	7.3
Water Soluble Sulphate (mg/l)	4	3.16	33.2
Point Load Test (mPa)	44	0.78	9.23
Unconfined Compressive Strength Test (mPa)	6	11.7	19.9
Particle Size Distribution Tests	1	XXX	

Total Core Recovery (TCR) was ranged between 35% and 100%. Solid Core Recovery (SCR) ranged between 21% and 100%. Rock Quality Designation (RQD) cored samples ranged between 0% and 91%. The RQD indicates a very poor to excellent rock mass quality which generally improved with depth. A summary of the Rock Quality Parameters is presented in Figure 6.

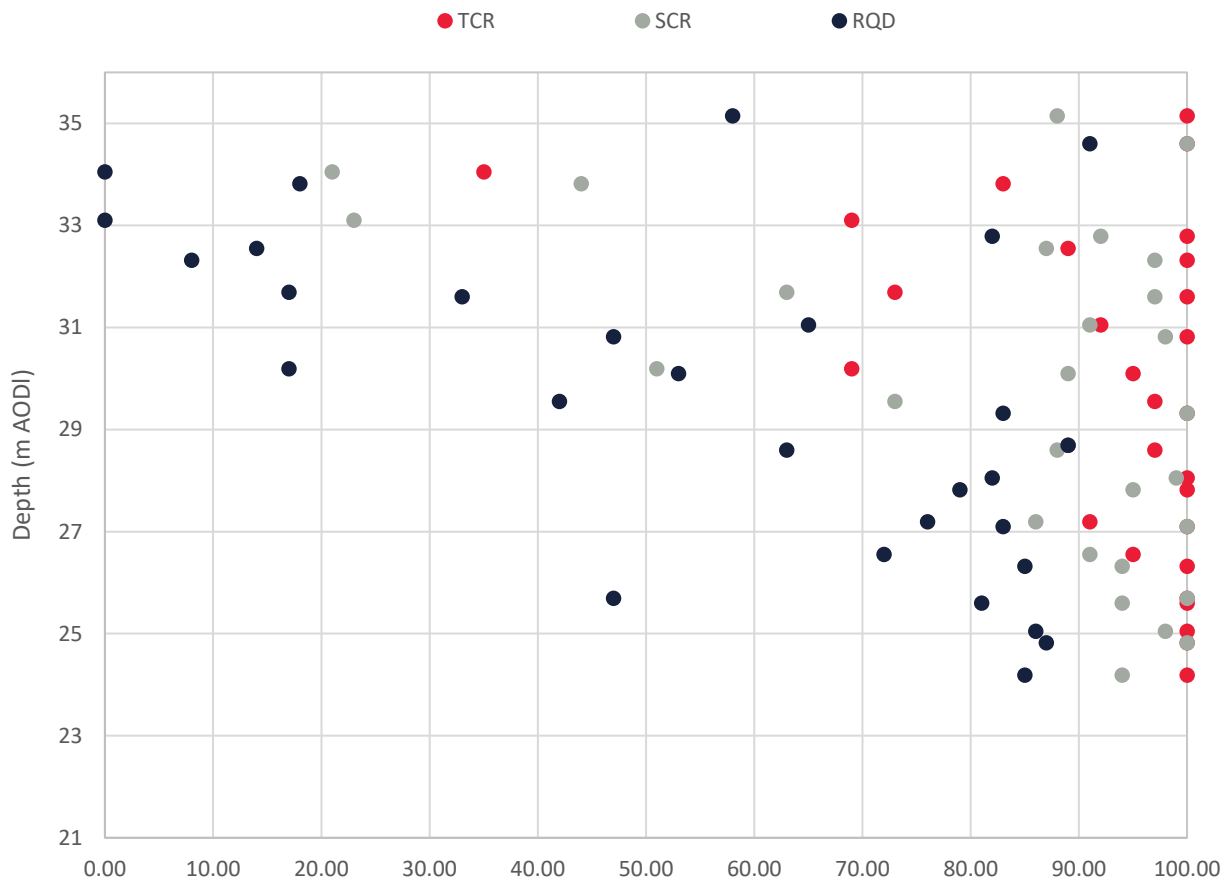


Figure 6 – Summary of Rock Quality Parameters v. Depth

Figure 6 indicates that rock quality generally increased with depth and that the highest quality rock was recorded between 8.00m and 16m bgl. Full details are included in the exploratory hole logs, within *Appendix B*.

44no. point load tests and 6no. uniaxial compressive strength (UCS) tests were undertaken on the Chester Formation bedrock, with the results summarised in *Table 10*.

An approximation of the unconfined compression strength (UCS) of the rock may be derived from the following relationship, described in *Equation 5*: $UCS = PLT\ Is(50) \times f_1$

Equation 5 (Tomlinson)

Where f_1 is derived from the correlation between $PLT\ Is(50)$ and UCS Results

In consideration of the correlation between $Is(50)$ and UCS values reported from laboratory testing and of published literature (ref. 13), a factor of 13 has been considered suitable.

Based on this relationship, estimated UCS values for sandstone range between 0.78 MPa and 9.23 MPa, indicating high variability in the rock strength of the samples tested. Generally, the rock is classified as very weak to moderately weak.

Direct testing results on 6 No. samples ranged between 11.7 MPa (moderately weak) and 19.9 MPa (moderately strong). Test termination reasons were generally recorded as axial cleavage or multiple shear and axial cleavage.

The estimated UCS derived from the correlation between point load tests and UCS generally indicate lower strengths than the direct UCS testing results. This is considered to be due to the inherently stronger nature of rock core samples used for UCS of better rock mass quality, as opposed to smaller samples used for PLTs.

The estimated UCS and UCS values recorded are generally consistent with the field descriptions of weak to moderately strong.

The results of estimated UCS from PLT correlation and UCS testing are shown in *Figure 7*.

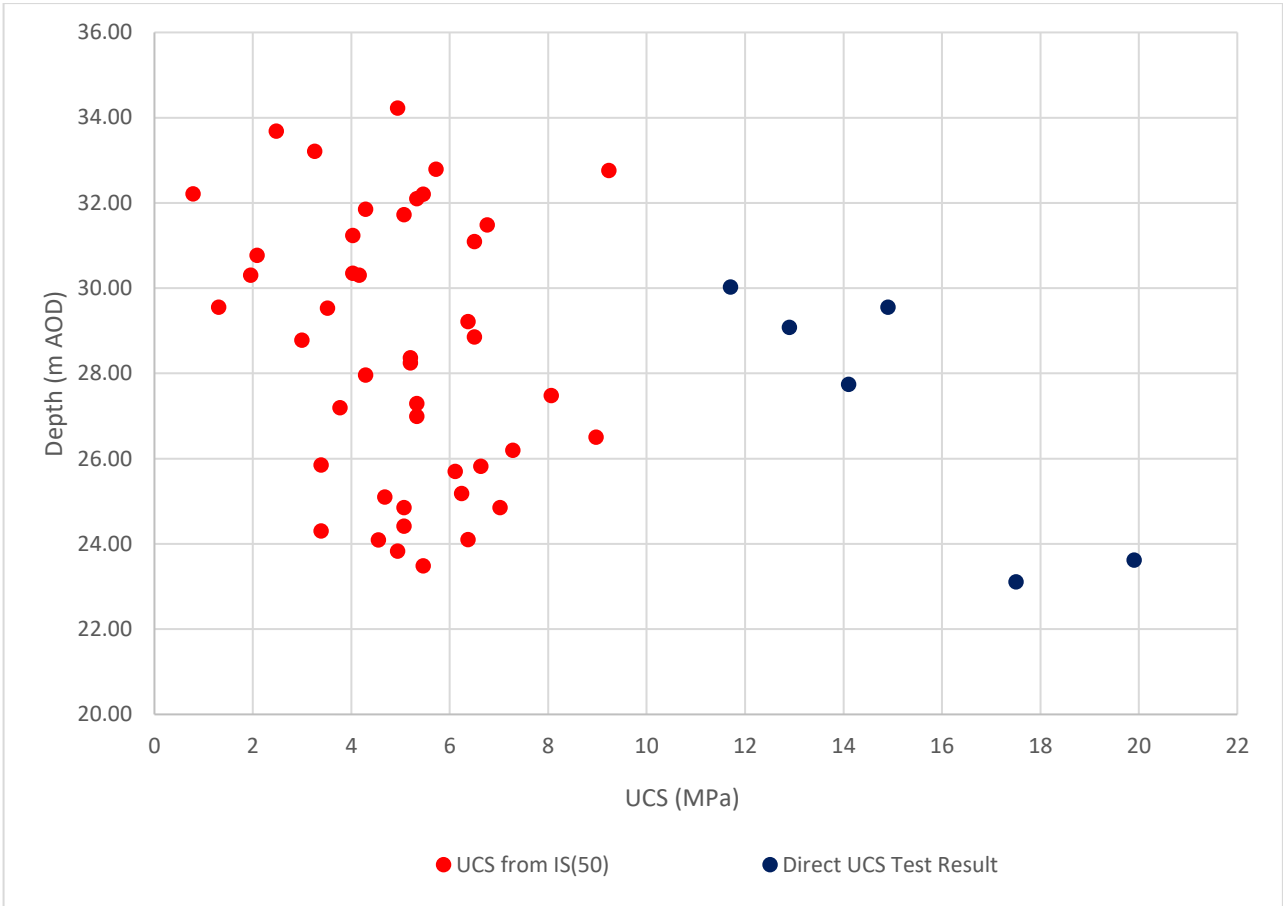


Figure 7 – Estimated UCS and UCS of Chester Formation v. Elevation (m AOD)

6.5 Aggressive Ground Conditions

The classification of the site in terms of concrete in aggressive ground is based on the guidance provided in Table C2 of the Building Research Establishment (BRE) Special Digest 1, 3rd edition of 2005 (Ref. 14). A summary of the results obtained during are summarised in Table 13, and Table 14 details the classification.

Table 13 – Summary of Testing Results

Stratum	Quantity	Range
Topsoil/Made Ground	pH	7 – 8.41
	Water Soluble Sulphate (mg/l)	<10 - 80
Shirdley Hill Sands	pH	4.6 – 8.4
	Water Soluble Sulphate (mg/l)	10.5 – 364
Glacial Till	pH	5.6 – 8.07
	Water Soluble Sulphate (mg/l)	5.08 – 51
Chester Formation	pH	4.5 – 7.3
	Water Soluble Sulphate (mg/l)	3.16 – 33.2

Table 14 – Aggressive Chemical Environment for Concrete (ACEC) Site Classification

Stratum	Design Sulphate Class	ACEC Class ⁽¹⁾
Topsoil/Made Ground	DS-1	AC-1
Shirdley Hill Sands	DS-1	AC-2z
Glacial Till	DS-1	AC-1
Chester Formation	DS-1	AC-2z

(1) ACEC assessment was based on the mobile groundwater condition in a brownfield scheme area.

7 GROUND CONTAMINATION ASSESSMENT

This section of the report includes the assessment of the potential contamination, solid and gas, identified on the subject site which may present a risk to the proposed end users, associated utilities, and the wider environment.

In LCRM guidance published by the Environment Agency (Ref. 3), the risk to human health is determined through an assessment of pollutant linkages between a source of contamination (within the ground either on or off site) and a sensitive receptor such as end users of the site, building materials, edible plants grown in gardens or groundwater abstracted for drinking. This is termed a source-pathway-receptor relationship. The same model is applied to the assessment of risk arising from ground gases as detailed within BS8576:2013 (Ref. 15).

These models have a common approach, which is one of a tiered assessment. At each stage of the assessment further detail can be applied to the conceptual site model to provide a detailed interpretation on a site by site basis. As part of the planning process this approach is adopted to establish either if the site is 'suitable for use' or whether additional work or else remedial work is required for the site to be deemed so.

The sub-sections hereafter therefore incorporate the second Tier (Tier 2) of the approach described in EA guidance, otherwise referred to as the Generic Quantitative Risk Assessment (GQRA). The GQRA builds on the qualitative risk assessment (Tier 1) presented in the Phase 1 PRA Report (Ref. 1), in conjunction with observations made during the ground investigation and is based solely on the results of the chemical and other testing data obtained as part of Curtins ground investigation. The GQRA is used to build/refine the Conceptual Site Model (CSM) for the site as detailed and presented in Section 9.0 of this report.

More detail on Curtins risk assessment methodology, rationale and hierarchy for human health risk assessment is enclosed in Appendix G.

7.1 Human Health GQRA

7.1.1 Adopted Soil Human Health GACs Screening Methodology

The proposed use of the site is most analogous with a '*Commercial*' end use scenario.

The soil organic matter (SOM) content has an influence on the volatilisation of organic contaminants (i.e., the higher the SOM, the lower the volatilisation rate and therefore inhalation exposure risk). Soil organic matter (SOM) values for the site soils ranged from 0.167% to 3.25% for Made Ground soils and 0.29% and 0.80% for natural soils. Consideration of the geometric mean results in a calculated value of 2.4% for Made Ground and 0.48% for natural soils.

As such a comparison against Tier 1 thresholds for a SOM of 1% for all the samples has been adopted for '*Commercial*' end-use.

A review of the chemical analysis results determined that concentrations of benzo(a)pyrene and other genotoxic PAHs were recorded within allowable concentrations ratios to use benzo(a)pyrene as a surrogate marker for the assessment of genotoxic PAHs in soil mixtures within Made Ground soils, in accordance with the relevant C4SL.

A review of the chemical analysis results determined that concentrations of benzo(a)pyrene were recorded below the laboratories limit of detection in samples of natural soil, and therefore, it is not possible to assess the genotoxic PAHs using a surrogate marker approach in accordance with Public Health guidance. Rather, samples have been assessed against individual PAH compounds, utilising relevant C4SL or S4UL Generic Assessment Criteria for these soil types.

The adopted GAC's are listed in *Appendix E*.

7.1.2 Generic Assessment Criteria Screening of Soil Laboratory Results

The results of the environmental testing can be referred to in *Appendix C*, with testing undertaken on a total of seven soil samples across the site.

With respect to the proposed '*Commercial*' end use, soil chemical analysis results did not record any exceedances when compared against GAC screening thresholds.

All soil samples were screened for asbestos, with one sample being positively identified as containing asbestos. Details of identified asbestos is included in Table 15 below.

Table 15 – Identified Asbestos Fibres

Exploratory Hole ID	Sample Depth (m bgl)	Asbestos Type	Asbestos Matrix	Asbestos Quantification (% w/w)
HP11	0.20 – 0.30	Amosite	Loose Fibres	<0.001

7.2 Controlled Waters GQRA

A model for assessing the potential for pollution of controlled waters and for deriving a safe concentration in ground and groundwater is the Environment Agency's publication "Remedial Targets Methodology – Hydrogeological Risk Assessment for Land Contamination" (Ref. 23).

In relation to the standards for controlled waters, there are currently no generic groundwater standards or surface water standards that are necessarily applicable to all sites.

However, dependant on the receptor identified as being at risk, see Section 7.2.1, the UK Drinking Water Standards (UK DWS) (Ref. 24), and/or Water Framework Directive Environmental Quality Standards (WFD EQS) (Ref. 25) can be utilised as primary screening values in a Level 1 assessment. These can also be supplemented by World Health Organisation (WHO) guidelines (Ref. 26), where WFD or DWS water quality standards (WQS) do not exist.

Volatile contaminants in groundwater have been assessed to human health as outlined within The Society of Brownfield Risk Assessment (SoBRA), Development of Generic Assessment Criteria for Assessing Vapour Risks to Human Health from Volatile Contaminants in Groundwater (Ref. 33).

7.2.1 Adopted Controlled Waters Tier 1 Screening Values and Methodology

The results of laboratory analysis of groundwater have been assessed against the UK Drinking Water Standards (DWS) due to the presence of a superficial Secondary A Aquifer (Shirdley Hill Sands deposit only) and bedrock Principal Aquifer (Chester Formation) underlying the site. In the absence of UK DWS, a comparison against WHO standards has been used. The nearest surface water feature is recorded to be an inland river located c. 680m north of the site, as such the groundwater samples have not been compared to Environmental Quality Standards (EQS) due to the distance from site.

The adopted Level 1 Screening Values are listed in *Appendix G*.

7.2.2 Generic Assessment Criteria Screening of Groundwater Laboratory Results

The results of the environmental testing can be referred to in *Appendix D*.

With respect to the underlying aquifers, exceedances are noted within groundwater samples, as detailed in *Table 16* below.

Table 16 – Table of Exceedances Recorded against the respective GACs

Determinant	GAC Screening Value		Locations Exceedances Encountered
	DWS Threshold	World Health Organisation (WHO)	
Boron (µg/l)	1000	0.3	RBH03 (45 µg/l) RBH02 (119 µg/l)
Copper (Dissolved) (µg/l)	2000	1	RBH03 (7 µg/l) RBH02 (16 µg/l)

Determinant	GAC Screening Value		Locations Exceedances Encountered
	DWS Threshold	World Health Organisation (WHO)	
Nickel (Dissolved) (µg/l)	20	70	RBH03 (35 µg/l)
Benzo(a)pyrene (µg/l)	0.01	0.01	<u>RBH02 (0.04 µg/l)</u>
Sum of benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, indeno(1,2,3-c,d)pyrene (µg/kg)	0.1	-	RBH02 (0.11 µg/l)

Recovered groundwater samples show minor exceedances of UK Drinking Water Standards and the World Health Organization Standards in five contaminants including Metals, and PAHs. These exceedances confirm what has been identified previously in other investigations. The of exceedances of heavy metals in groundwaters beneath the site suggests naturally occurring sources rather than point sources associated with former or current land uses. A possible source may be residues from historic agricultural land uses or chemicals used in the maintenance of pitches and grassed areas.

A review of the contaminants and results has shown that risks to controlled waters from site soils are limited in nature and are unlikely to significantly benefit from either further contaminant modelling or remedial action. The results of soil testing identified the generally low-level leachable contaminants across the site within Made Ground Deposits and topsoil with no specific historic or, current point source identified.

8 GROUND GAS ASSESSMENT

The assessment of risk presented by ground gases is assessed with reference to guidance published by CIRIA Assessing Risks Posed by Hazardous Ground Gases to Buildings, C665 (Ref. 15), BSI Publication Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings BS8485:2015 (Ref. 16) and other broadly accepted references such as the Ground Gas Handbook 2009 (Ref. 18).

The ground gas risk assessment adopts a tiered approach. In the first instance this involves a re-evaluation of the Conceptual Site Model described within the Phase 1 PRA Report (Ref. 1) and thereafter validating this conceptual model with the ground gas data, the semi-quantitative risk assessment.

8.1 Ground Gas Monitoring Results

To characterise the site's ground gas regime and validate the qualitative assessment of ground gas risk standpipe installations were incorporated within 8 boreholes as detailed in *Section 3.2*.

Four ground gas monitoring visits have been undertaken between the 01st of December 2025 and 06th of January 2026, with barometric pressure recorded between 987mb and 1010mb. Rising barometric pressures were recorded on the first and third visits, with falling barometric pressure recorded on the second and fourth visits. The results log sheets are contained within *Appendix D* and summarised in *Table 17*.

Table 17 – Summary of Ground Gas Monitoring Results

Exploratory Hole ID	Maximum Methane Concentration (%)	Maximum Carbon Dioxide Concentration (%)	Minimum Steady Oxygen Concentration (%)	Maximum Gas Flow (l/hr)	
				Maximum	Steady State
RBH01	<0.1	2.4	4.1	0.5	<0.1
RBH02	<0.1	0.7	19.7	3	<0.1
RBH03	<0.1	2.8	18.6	14.9	<0.1
RBH04	<0.1	11.3	<0.1	0.4	<0.1
RBH05	<0.1	1.8	0.4	<0.1	<0.1
RBH06	5.8	8.9	<0.1	-18.2	<0.1
WS01	1.2	7.4	<0.1	<0.1	<0.1
WS02	0.3	7.6	0.3	<0.1	<0.1

Methane was recorded at below the limit of detection of the monitoring instrument (<0.1% v/v) in the majority of boreholes during the monitoring visit excepting RBH06 on the second and third visits, WS01 on the second visit and WS02 on the first visit.

Maximum carbon dioxide concentrations of 11.3% v/v were recorded in RBH04 on the second visit.

Carbon Monoxide and Hydrogen Sulphide were recorded below the limit of detection (<1 ppm) in the majority of boreholes throughout the monitoring period. Within RBH06 carbon monoxide concentrations ranged between 170 and 182ppm and hydrogen sulphide concentrations were 50ppm.

Peak air flow rates were recorded at 14.9 l/hr within RBH03 on the third visit, before returning to a steady state of <0.1 l/hr. Peak negative air flow rates of -18.2l/hr were recorded in RBH06 on the third visit, before returning to a steady

state of <0.1 l/hr. Steady state airflow rates were recorded as <0.1 l/hr in all borehole positions throughout the monitoring period.

8.2 Ground Gas Assessment

The Preliminary Conceptual Site Model (PCSM) presented within the Phase 1 PRA (Ref. 1) identified Made Ground as a potential source of ground gas generation. Noxious and asphyxiate gases were attributed to include, but not limited to, carbon dioxide, carbon monoxide, methane, and hydrogen sulphide. The PCSM identified a **Moderate/Low** Risk.

The development plans comprise of the construction of a new indoor pitch, new show pitch with spectator stand, extension of the existing carpark, extension and refurbishment of the existing Academy Building, all with associated hard and soft landscaping.

During the ground investigation Topsoil was encountered from ground level with thicknesses ranging between 0.10m to 0.31m, typically with limited putrescible content.

Made Ground soils were encountered both as granular and cohesive soils either from ground level or underlying the Topsoil. Thicknesses of this deposit ranged between 0.10m and 3.70m and were recorded to contain limited putrescible content.

The Shirdley Hill Sands were recorded to contain localised highly organic peat deposits with thicknesses of peat ranging between 0.20m and 0.40m. The Glacial Till deposits and Chester Formation were not recorded to be rich in organic materials.

The NHBC Foundation (Ref. 19) advises that ground gas risk assessment be as described in the current British Standard. In accordance with BS8485:2019 (Ref. 17), consideration of the recorded soil gas concentrations and air flow rates, presented in *Section 8.1*, enables hazardous gas flow rates (Q_{hg}) to be evaluated. Q_{hg} can be derived for both 'representative' and 'worst case' scenarios, and a comparison made in support of an appropriate assessment of ground gas risk.

A total of four monitoring visits has been undertaken to date, in various atmospheric conditions. Monitoring has been undertaken in a range of atmospheric conditions, including rising and falling barometric state, and following periods of rainfall and snow.

For a 'borehole' scenario where the highest steady state flow rates and maximum gas concentrations, within a single borehole on a single monitoring event, are adopted, whereas for the 'worst-case' check the highest steady state air flow rates and peak gas concentrations, from any borehole at any time, within the same strata, are used.

Evaluation of the 'borehole' scenario records a maximum Q_{hg} of 0.0452 l/hr for carbon dioxide (RBH04 Visit 2) on the sixth visit) and 0.0056/hr (RBH06 Visit 2) for methane.

Evaluation of the 'worst-case check' (highest hazardous gas flow rates) calculated during monitoring, irrespective of location for boreholes (where installed in the same strata), using peak gas concentrations and peak flow rates recorded a maximum Q_{hg} of 1.0556 l/hr for methane and Q_{hg} of 1.6198 l/hr for carbon dioxide for Made Ground soils. Similarly, a Q_{hg} of 0.0012 l/hr for methane and 0.0452 l/hr for carbon dioxide was calculated for Shirdley Hill Sand deposits. A 'worst-case check' Q_{hg} of 0.0149 l/hr for methane and 0.4172l/hr for carbon dioxide was calculated for the Chester Formation.

Given the limited putrescible content observed in the Made Ground soils during the ground investigation, this deposit is not considered to be a significant source of ground gas generation. Further, the potential for ground gas generation in the sites underlying superficial soils (including organic peat deposits) is not considered to be low. Despite its naturally high organic content, peat is not considered to be a significant ground gas generating source as its organic matter is locked within a low permeability matrix, resulting in very slow generation rates that only increase significantly if oxygen is artificially introduced. No sustained gas flow was recorded in boreholes reflective of the slow generation rates.

Considering the above commentary, the 'borehole' scenario is considered as the most appropriate assessment of the site ground gas regime and it increase ground gas classification based on maximum concentrations of carbon dioxide and methane would be considered unnecessarily conservative.

In accordance with BS8485 guidance, the 'borehole' scenario is taken as the site's GSV which indicates a Characteristic Situation 1 (CS-1). With consideration to the above commentary the site should be classified as a Characteristic Situation 1 (CS-1) not requiring ground gas protection measures. This also concurs with previous assessments on the site.

The potential risks from ground gases to the excavations are to be dealt with by the Contractor, in accordance with the Confined Space Regulations, during construction. Appropriate ground gas monitoring and safety measures should be in place during the works, as the potential presence of ground gases could pose a risk in any confined spaces of deep excavations.

9 REVISED CONCEPTUAL SITE MODEL

The Preliminary Conceptual Site Model (PCSM) presented in the Phase 1 PRA Report (Ref. 1) and discussed in *Section 2.8* of this report has been revised following the GQRA in *Section 7.0* above. The Revised Conceptual Site Model (CSM) is summarised in the table overleaf.

The CSM details the source-pathway-receptor linkages or potential pollutant linkages (PPL) that have been identified as relevant for the site. The GQRA details the associated level of risk relating to these potential pollutant linkages.

The CSM follows the framework outlined within CIRIA C552 (Ref. 20) which is summarised within *Appendix G*.

The 'risk rating' within the CSM refers to the risk that the source, pathway, receptor linkage or PPL is complete. Unless specifically stated it does not necessarily refer to an immediate risk and is intended to be used as a tool to assess the necessity for further assessment/investigation.

Risks presented by Mining are discussed and assessed within *Section 2.3.4*.

Risks presented by Unexploded Ordnance are discussed and assessed in *Section 2.7*.

Under current health and safety legislation, employers are required to carry out their own appropriate risk assessments and mitigation to protect themselves and their employees, other human receptors, and the environment from potential contamination. Such risks must be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015 (Ref. 21) which require that potential risks to human health and the environment from construction activities are appropriately identified and all necessary steps taken to eliminate / manage that risk. It has been assumed that any future construction works on site will be undertaken in compliance with these requirements. Reference should be given to the environmental testing results discussed within *Section 7.0* and presented within *Appendix C*.

Qualitative Risk Assessment

Generic Quantitative Risk Assessment

Detailed Quantitative Risk Assessment or; Remedial Action

- The table below represents the Second stage in the land quality risk assessment process; the Revised Conceptual Site Model following the Quantitative Risk Assessment.
- For a development site to be deemed 'suitable for use' the level of risk needs to be brought down to acceptable levels, i.e. low to very low risk. The purpose of each stage of risk assessment is ultimately to establish if there is a requirement for additional levels of assessment to be made to have sufficient confidence to support a risk characterisation or management decision, e.g., remedial action.

Conceptual Site Model			Qualitative Risk Assessment			Recommended Actions	Actions
Source	Pathway(s)	Receptor(s)	Consequence	Likelihood of Occurrence	Risk Rating		
Potential for uncontrolled deposition of Made Ground associated with local construction works. Potential for Localised fuel spills and leakages associated with hard standing carparks and roads located onsite. Potential for Localised polychlorinated biphenyls (PCBs) associated with historic electric substation.	Direct contact and dermal uptake, soil and dust ingestion, dust & migration inhalation Vertical and horizontal migration through the superficial deposits (soils).	End user of site	Medium Chronic health risk.	Low	Moderate/Low	No exceedances above commercial General Assessment Criteria were identified. Asbestos positively identified during MML ground investigation including WS01 at 1m bgl (0.0025% w/w) and RBH01 at 0.5m bgl (<0.001% w/w). Asbestos also positively identified during Curtins ground investigations in HP11 at 0.3m bgl (<0.001% w/w).	Construction workers to be provided with appropriate PPE and sanitary facilities. Asbestos management plan during groundworks and construction works, Actions to be detailed in a Remediation Strategy. Installation of clean cover system may be required for some areas of soft landscaping. Details to be specified in a Remediation Strategy.
		Construction Workers		Low	Moderate/Low		
	Horizontal migration over and through the superficial deposits (soils).	Controlled Waters (groundwater) Secondary A Aquifer associated with superficial deposits. Principal Aquifer associated with the bedrock deposits. Site is located within a Zone 3 Source Protection Zone	Medium Pollution of classified groundwater.	Low	Moderate/Low	Minor exceedances of UK Drinking Water Standards and the World Health Organization Standards in five contaminants including Metals, and PAHs from 2 groundwater sampling locations. Risks to controlled waters from site soils are limited in nature and are unlikely to significantly benefit from either further contaminant modelling or remedial action. The results of soil testing identified the generally low-level leachable contaminants across the site within Made Ground Deposits and topsoil with no specific historic or, current point source identified.	Installation of clean cover will remove potential contaminant containing Made Ground. Details to be specified in a Remediation Strategy
	Direct contact and dermal uptake, soil and dust ingestion, dust & migration inhalation	Controlled Waters (surface water) Inland river located 680m north	Medium Pollution of sensitive water resources.	Unlikely	/Low		
Organic matter, Made Ground and/or contamination as source material for the generation of ground gas.	Vertical and horizontal migration through Made Ground.	End users of site	Medium Chronic health risk.	Unlikely	Low	No elevated concentrations of methane, carbon dioxide, hydrogen sulphide or carbon monoxide were recorded during the monitoring period. A CS-1 situation has been assigned to the site, the development does not require any ground gas protection measures.	No further action required.

10 SUMMARY OF POTENTIAL POLLUTANT LINKAGES

A **Moderate/Low** risk rating is identified to site end-users and construction workers from contamination in Made Ground soils from direct contact, dermal uptake, soil and dust ingestion and inhalation. There were no exceedances of *Commercial* GACs; however, asbestos fibres in soils were identified during both the MML and Curtins ground investigation. Contractors must prepare suitable risk assessments and methods statements, and mitigation measures which may not be limited to the use of suitable PPE and provision of suitable welfare and sanitary facilities during works. Clean capping may be required in any new nearby soft landscaped areas.

A **Moderate/Low** risk rating is identified to controlled waters (Groundwater), and a **Low** risk rating is identified to controlled waters (Surface Waters) as the ground investigation encountered no olfactory, visual or gross contamination.

A **Low** risk rating is identified to site end users from ground gases following the monitoring visits, with a CS-1 assigned to the site, the development requires no ground protection measures.

11 ENGINEERING ASSESSMENT AND RECOMMENDATIONS

11.1 Introduction

This section will assess the relevant geotechnical issues for the proposed development comprising of a new indoor pitch, new show pitch with spectator stand, extension of the existing carpark, extension and refurbishment of the existing Academy Building, all with associated hard and soft landscaping.

The engineering assessment considers foundation design, bearing capacity, settlement, excavations, and ground floor slabs for the site. It is understood that structural loadings up to 850kN are required for the development. It should be noted that detail may change in the development of designs beyond the issue of this Phase 2 Report and the Construction Designer should satisfy themselves regarding the adequacy of their design and proposed approach to construction by reference to the on-going project design proposals, the site investigation information, and their own examination of the site.

11.2 Summary of Ground Conditions

The ground conditions at the site generally comprised of surface covering of either Topsoil, hardstanding or Made Ground soils. This was generally underlain by granular Made Ground soils with localised cohesive Made Ground. Superficial soils, where encountered, generally comprised of Granular or cohesive Glacial Till with localised Shirdley Hill Sand deposits. Bedrock was confirmed to comprise of sandstone consistent with the Chester Formation.

Characteristic geotechnical parameters suggested for use in preliminary geotechnical designs are discussed in *Section 5.0* and *Section 6.0*.

11.3 Excavations

Based on observations on site, together with the results of in-situ and laboratory tests, it is considered that excavations to <1.20m bgl should stand unsupported in the short term at suitable batters. Side support for safety purposes should of course be provided to all excavations which appear unstable, and those >1.20m deep, in accordance with Health and Safety Regulations.

Suitable side slope batters may be required. These must be designed by a suitably qualified temporary works contractor for any excavations.

It is anticipated that excavations with conventional plant through the Made Ground, superficial soils and weathered bedrock will be attainable, however, a breaker may be required where bedrock becomes stronger.

Groundwater was encountered during the ground investigation and during post-investigation monitoring and appeared to be largely located within the weathered Chester Formation deposit. Groundwater may be encountered as seepages in shallow excavations for foundations or services as perched water. It is considered that groundwater inflows, if encountered, may be controlled by pumping from sumps.

All excavation temporary works shall be designed by a suitably qualified temporary works contractor for any excavations.

11.4 Earthworks

It is known that earthworks will be required to facilitate the scheme. It is anticipated that a Cut and Fill will be required for the site, prior to construction of the up to of the construction of a new indoor pitch, new show pitch with spectator stand, extension of the existing carpark, extension and refurbishment of the existing Academy Building, all with associated hard and soft landscaping.

It is important that the earthworks are undertaken under an Earthworks Specification in accordance with CC 601 Earthworks to capture the geotechnical acceptability criteria for the re-use of site won and imported materials as engineered fill and the compaction requirements.

11.5 Soakaways

2 No. soakaways were undertaken as part of the ground investigation.

The Infiltration Rate for both soakaway tests (SA01 and SA02) were determined as N/A, due to the water level remaining the same throughout the length of the test. As such, soakaways are not considered to be a suitable drainage strategy for the proposed development.

11.6 Foundation Design

It is understood that the proposed development is for the construction of a new indoor pitch, new show pitch with spectator stand, extension of the existing carpark, extension and refurbishment of the existing Academy Building, all with associated hard and soft landscaping. It is understood that structural loadings up to 850kN are required for the development.

Based on the required loadings and the ground conditions encountered during Curtins intrusive ground investigation shallow foundations are not considered suitable for the proposed development. Alternatively, a piled foundation solution is likely to be feasible, to transfer loads to more competent sandstone bedrock. End bearing piles socketing into the Chester Formation sandstone are likely to be a suitable foundation solution for high loads. The type, diameter and depth of the piles should be determined by a specialist whose design should be warranted. Deep mass trench fill may be deemed an option, however specific geotechnical assessment would be required to determine the feasibility.

11.7 Ground Floor Slabs

Based on the findings of the ground investigation it is recommended that consideration is given to constructing suspended ground floor slabs, bearing on pile caps and supported by a network of beams.

11.8 Volume Change Potential in Cohesive Glacial Till

Based on the laboratory testing results discussed in Section 6.2.2, the cohesive Glacial Till encountered on site has a low volume change potential in accordance with guidance from the NHBC Standards Chapter 4.2 (Ref. 9).

11.9 Chemical Attack on Buried Concrete

The site has been classified in accordance with BRE Special Digest (Ref. 14) and laboratory testing undertaken accordingly in *Section 6.5*.

Based on the laboratory test results, DS-1 and AC-2z is considered appropriate for this development. This is based on lower pH levels recorded in the Shirdley Hill Sands and Chester Formation deposits.

12 CONCLUSION AND RECOMMENDATIONS

12.1 Ground Contamination

A revised tabulated revised Conceptual Site Model has been derived following the findings on the Generic Quantitative Risk Assessment risk assessment and is presented in Section 8.0.

12.1.1 Ground Contamination

A **Moderate/Low** risk rating is identified to site end-users and construction workers from contamination in Made Ground soils from direct contact, dermal uptake, soil and dust ingestion and inhalation. There were no exceedances of Commercial GACs; however, asbestos fibres in soils were identified during both the MML and Curtins ground investigation. containing materials have been encountered. Contractors must prepare suitable risk assessments risk assessments and methods statements, and mitigation measures which may not be limited to the use of suitable PPE and provision of suitable welfare and sanitary facilities during works. Clean capping may be required in any new nearby soft landscaped areas.

A **Low** risk rating is identified to controlled waters (Groundwater and Surface Waters) as the ground investigation encountered no olfactory, visual or gross contamination. This assessment should be reviewed and updated following receipt of groundwater samples.

A **Low** risk rating is identified to site end users from ground gases following the monitoring visits, with a CS-1 assigned to the site, the development requires no ground protection measures.

12.2 Recommendations

Based on the findings of the ground investigation, the following recommendations are made:

1. Construction workers to be provided with appropriate PPE and sanitary facilities with reference to environmental testing certificates appended herein.
2. Adopt an Asbestos Management Plan during groundworks and construction works.
3. Clean capping layer installed in soft landscaping.
4. It is recommended that an Earthworks Specification is undertaken once final cut and fill volumes have been finalised.
5. It is recommended that a specialist piling contractor is consulted to assess the suitability of a piled foundation solution for the proposed development.

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APPENDICES

Appendix A – Drawings

Appendix B – Exploratory Hole Logs

Appendix C – Chemical Laboratory Test Results

Appendix D – Geotechnical Laboratory Test Results

Appendix D – Ground Gas Monitoring Results

Appendix E – GAC Screening Thresholds

Appendix F – Risk Assessment Methodology

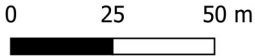
Appendix A – Drawings



Legend

Exploratory Holes

- Hand Pit
- Foundation Pit
- Soak Away Trial Pit
- Dynamic Sample Borehole
- Rotary Cored Borehole
- Window Sample Borehole
- Red line boundary



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Status:	INFORMATION			
Project:	Liverpool FC Academy			
Drg Title:	Exploratory Hole Location Plan			
Scale:	Size:	Issue Date:	Drawn:	Checked:
See Scale	A3	28/11/2025	JP	NF
Drg No:	088269-CUR-00-XX-DR-GE-80002			Rev:
				P01

1.2 PROPOSED MASTERPLAN

PROPOSED SITE PLAN

SUMMARY OF DEVELOPMENT

The masterplan proposals consist of:

- Extending and refurbishing the academy building
- A new full-size artificial indoor pitch
- A new full-size show pitch
- A 499 (maximum) seat spectator stand and associated accommodation such as changing rooms, officials rooms and spectator facilities.
- Replacement of lost parking spaces and some additional parking spaces with coach and mini-bus parking.
- Landscaping, pitch access, and replacement trees.

— SITE BOUNDARY



Appendix B – Exploratory Hole Logs

Curtins				Trial Pit Log			Trialpit No HP01 Sheet 1 of 1					
Project Name: LFC Academy				Project No. 088269		Co-ords: 342251.71 - 398464.40 Level: 36.56		Date 12/11/2025				
Location: Liverpool FC Academy, Liverpool, L33 7ED						Dimensions (m): Depth 1.00		0.33 		Scale 1:25 Logged JP		
Water Strike		Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description				
		Depth	Type	Results								
		0.70 - 0.80	ES		0.35	36.21		MADE GROUND: Grass cover over brown fine to medium sand.				
					1.00	35.56		MADE GROUND: Greyish brown slightly gravelly clayey fine to coarse sand with a low cobble content. Gravel is fine to coarse, angular to subangular of brick, slag, sandstone and mudstone. Cobbles are subangular of brick. <i>From 0.35m to 1.0m bgl: TRL CBR test undertaken.</i>				
									End of pit at 1.00 m			
									1			
									2			
									3			
									4			
									5			
Remarks: Hand excavated trial pit to 1.0m bgl with DCP test undertaken at 0.35m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. No water strikes were encountered during excavation.										AGS		
Stability: Stable												

Curtins				Trial Pit Log			Trialpit No HP02 Sheet 1 of 1		
Project Name: LFC Academy				Project No. 088269		Co-ords: 342283.93 - 398435.49 Level: 36.48		Date 12/11/2025	
Location: Liverpool FC Academy, Liverpool, L33 7ED						Dimensions (m): 0.33 0.33 Depth 1.00		Scale 1:25 Logged JP	
Water Strike		Samples and In Situ Testing		Depth (m)	Level (m)	Legend	Stratum Description		
		Depth	Type	Results					
		0.50 - 0.60	ES		0.35	36.13		MADE GROUND: Grass cover over brown fine to medium sand.	
								MADE GROUND: Greyish brown slightly gravelly clayey fine to coarse sand with a low cobble content. Gravel is fine to coarse, angular to subangular of brick, slag, metal and wood. Cobbles are subangular of brick. From 0.37m to 1.0m bgl: TRL CBR test undertaken.	
					1.00	35.48		End of pit at 1.00 m	
								1	
								2	
								3	
								4	
								5	
Remarks: Hand excavated trial pit to 1.0m bgl with DCP test undertaken at 0.37m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. No water strikes were encountered during excavation.								AGS	
Stability:		Stable							

Project Name: LFC Academy

Project No.
088269

Co-ords: 342289.89 - 398497.85
Level: 36.60

Date
12/11/2025

Location: Liverpool FC Academy, Liverpool, L33 7ED

Dimensions
(m):

0.33

Depth
1.00

0.33

Scale
1:25

Logged
JP

Client: Liverpool FC

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.20	36.40		MADE GROUND: Grass cover over brown fine to medium sand.
				0.30	36.30		MADE GROUND: Light brown fine to medium sand.
				0.50	36.10		MADE GROUND: Greyish brown slightly gravelly clayey fine to coarse sand. Gravel is fine to coarse, angular to subangular of brick.
							From 0.3m to 1.0m bgl: TRL CBR test undertaken.
							Brown slightly gravelly fine to coarse SAND. Gravel is fine to coarse, subangular to subrounded of sandstone.
				1.00	35.60		End of pit at 1.00 m

1

2

3

4

5

Remarks: Hand excavated trial pit to 1.0m bgl with DCP test undertaken at 0.30m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. No water strikes were encountered during excavation.

Stability: Stable



Project Name: LFC Academy

Project No.
088269

Co-ords: 342317.64 - 398463.44

Level: 36.58

Date

12/11/2025

Location: Liverpool FC Academy, Liverpool, L33 7ED

Dimensions
(m):

0.33

Scale

1:25

Client: Liverpool FC

Depth
0.60

0.33

Logged
JP

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.30	36.28	[Cross-hatched pattern]	MADE GROUND: Grass cover over brown fine to medium sand.	
				0.60	35.98	[Cross-hatched pattern]	MADE GROUND: Greyish brown slightly gravelly clayey fine to coarse sand with a low cobble content. Gravel is fine to coarse, angular to subangular of brick. Cobbles are subangular of brick.	
							From 0.45m to 1.0m bgl: TRL CBR test undertaken. End of pit at 0.60 m	

Remarks:	Hand excavated trial pit to 0.6m bgl with DCP test undertaken at 0.45m bgl. Position was GPR cleared and CAT scanned by Avoim Maa and a Curtins Engineer. No water strikes were encountered during excavation.
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Stability: Stable



Project Name: LFC Academy

Project No.
088269

Co-ords: 342229.06 - 398468.32

Level: 36.29

Date

12/11/2025

Location: Liverpool FC Academy, Liverpool, L33 7ED

Dimensions
(m):

0.3

Depth
1.00

03

Scale
1:25

Logged
JP

Client: Liverpool FC

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.30	35.99		MADE GROUND: Grass cover over brown fine to medium sand.		
							MADE GROUND: Greyish brown slightly gravelly clayey fine to coarse sand with a low cobble content. Gravel is fine to coarse, angular to subangular of brick, sandstone and mudstone. Cobbles are subangular of brick. <i>From 0.32m to 1.0m bgl: TRL CBR test undertaken.</i>		
				1.00	35.29			End of pit at 1.00 m	1
									2
									3
									4
			5						

Remarks:	Hand excavated trial pit to 1.0m bgl with DCP test undertaken at 0.32m bgl. Position was GPR cleared and CAT scanned by Avoim Maa and a Curtins Engineer. No water strikes were encountered during excavation.
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Stability: Stable



Curtins				Trial Pit Log			Trialpit No HP06 Sheet 1 of 1		
Project Name: LFC Academy				Project No. 088269		Co-ords: 342277.67 - 398412.65		Date 12/11/2025	
Location: Liverpool FC Academy, Liverpool, L33 7ED				Dimensions (m):		0.3		Scale 1:25	
Client: Liverpool FC				Depth 1.00		0.3		Logged JP	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.30	35.98		MADE GROUND: Grass cover over brown fine to medium sand.		
				0.60	35.68		MADE GROUND: Greyish brown slightly gravelly clayey fine to coarse sand with a low cobble content. Gravel is fine to coarse, angular to subangular of brick, wood and slag. Cobbles are subangular of brick. <i>From 0.35m to 1.0m bgl: TRL CBR test undertaken.</i>		
				1.00	35.28		MADE GROUND: Greyish brown slightly gravelly clayey fine to coarse sand with a low cobble content. Gravel is fine to coarse, angular to subangular of brick, wood and slag. Cobbles are subangular of brick. <i>From 0.35m to 1.0m bgl: TRL CBR test undertaken.</i> End of pit at 1.00 m		
								1	
							2		
							3		
							4		
							5		
Remarks: Hand excavated trial pit to 1.0m bgl with DCP test undertaken at 0.35m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. No water strikes were encountered during excavation.									
Stability: Stable									

Project Name: LFC Academy

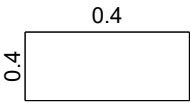
Project No. 088269

Co-ords: 342343.99 - 398468.02
Level: 36.44

Date 12/11/2025

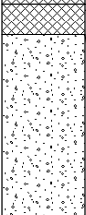
Location: Liverpool FC Academy, Liverpool, L33 7ED

Dimensions (m):
Depth 1.00



Scale 1:25
Logged JP

Client: Liverpool FC

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.40 - 0.50	ES		0.30 0.40	36.14 36.03	 	MADE GROUND: Grass over light brown fine to medium sand. MADE GROUND: Greyish brown slightly gravelly clayey fine to coarse sand. Gravel is fine to coarse, subangular of sandstone. <i>From 0.32m to 1.0m bgl: TRL CBR test undertaken.</i> Brown gravelly fine to coarse SAND. Gravel is fine to coarse, subangular of sandstone and mudstone.
				1.00	35.44		End of pit at 1.00 m

Remarks: Hand excavated trial pit to 1.0m bgl with DCP test undertaken at 0.32m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. No water strikes were encountered during excavation.

Stability: Stable



Project Name: LFC Academy

Project No. 088269

Co-ords: 342294.07 - 398524.01
Level: 36.43

Date 12/11/2025

Location: Liverpool FC Academy, Liverpool, L33 7ED

Dimensions (m): 0.3
Depth 0.80

Scale 1:25
Logged JP

Client: Liverpool FC

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
	0.50 - 0.60	ES		0.30	36.13		MADE GROUND: Grass cover of light brown fine to medium sand.
				0.50	35.93		MADE GROUND: Brown fine to medium sand. <i>From 0.34m to 0.80m bgl: TRL CBR test undertaken until refusal at 0.80m bgl.</i>
				0.60	35.83		Firm dark grey very sandy clay. Sand is fine to coarse.
				0.79	35.64		Dark brown slightly gravelly fine to medium SAND. Gravel is fine to medium, subangular of sandstone.
				0.80	35.63		Grey CONCRETE.
							End of pit at 0.80 m

Remarks: Hand excavated trial pit to 0.8m bgl with DCP test undertaken at 0.34m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. No water strikes were encountered during excavation.

Stability: Stable



Curtins				Trial Pit Log			Trialpit No HP09 Sheet 1 of 1		
Project Name: LFC Academy				Project No. 088269		Co-ords: 342456.65 - 398572.28		Date 11/11/2025	
Location: Liverpool FC Academy, Liverpool, L33 7ED				Dimensions (m):		0.6		Scale 1:25	
Client: Liverpool FC				Depth 0.85		0.45		Logged JP	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.07	38.58		Grey CONCRETE paving slab. <i>From ground level to 0.70m bgl: Brick wall foundations.</i>		
				MADE GROUND: Light brown fine to coarse sand.					
				0.30	38.35		MADE GROUND: Brown slightly clayey sandy gravel with a high cobble content. Gravel is fine to coarse, angular to subangular of brick and concrete. Cobbles are subangular of brick and cobbles.		
				0.65	38.00			Brown fine to coarse SAND. <i>From 0.70m to 0.85m bgl: Concrete foundation steps out 0.15m, with a raised ridge noted extending a further 0.15m. The concrete then extends down to the final excavated depth.</i>	
				0.85	37.80	<i>End of pit at 0.85 m</i>			
Remarks: Hand excavated foundation pit to 0.85m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. No water strikes encountered during excavation. For more information refer to cross section drawings. Ground level estimated from topographic survey. Co-ordinates estimated from GIS mapping tool.				1 2 3 4 5					
Stability: Stable									



Curtins				Trial Pit Log			Trialpit No HP10 Sheet 1 of 1		
Project Name: LFC Academy				Project No. 088269		Co-ords: 342449.32 - 398581.88		Date 12/11/2025	
Location: Liverpool FC Academy, Liverpool, L33 7ED				Dimensions (m):		0.5		Scale 1:25	
Client: Liverpool FC				Depth 0.65		0.45		Logged JP	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.10	38.49		Grey CONCRETE paving slab. <i>From ground level to 0.33m bgl: Brick wall foundations.</i>		
				0.65	37.94		MADE GROUND: Greyish brown gravelly fine to coarse sand with cobbles. Gravel is fine to coarse, angular to subangular of brick, concrete and slag. Cobbles are subangular of brick, concrete and slag. <i>From 0.33 to 0.43m bgl: Concrete foundation extends 0.2m from wall with a thickness of 0.1m.</i> <i>From 0.33 to 0.45m bgl: Concrete slab noted on the opposite side of the foundation pit with a thickness of 0.1m.</i> End of pit at 0.65 m		
							1		
							2		
							3		
							4		
							5		
Remarks: Hand excavated foundation pit to 0.65m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. No water strikes encountered during excavation. For more information refer to cross section drawings. Ground level estimated from topographic survey. Co-ordinates estimated from GIS mapping tool.									
Stability: Stable									



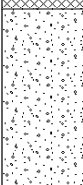
Curtins				Trial Pit Log			Trialpit No HP11 Sheet 1 of 1		
Project Name: LFC Academy				Project No. 088269		Co-ords: 342356.69 - 398413.99		Date 12/11/2025	
Location: Liverpool FC Academy, Liverpool, L33 7ED				Dimensions (m):		0.35		Scale 1:25	
Client: Liverpool FC				Depth 1.00		0.35		Logged JP	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.20 - 0.30	ES		0.70	37.46		MADE GROUND: Grass cover over brown sligthyl clayey slightly gravelly fine to coarse sand with occasional rootlets. Gravel is fine to coarse, subangular of brick.		
							From 0.32m to 1.0m bgl: TRL CBR test undertaken.		
							MADE GROUND: Brown sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, subangular of concrete.		
				1.00	37.16		End of pit at 1.00 m		
1 2 3 4 5									
Remarks: Hand excavated trial pit to 1.0m bgl with DCP test undertaken at 0.32m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. No water strikes were encountered during excavation.									
Stability: Stable									



Curtins				Trial Pit Log			Trialpit No HP13 Sheet 1 of 1		
Project Name: LFC Academy				Project No. 088269		Co-ords: 342338.12 - 398536.05		Date 14/11/2025	
Location: Liverpool FC Academy, Liverpool, L33 7ED				Dimensions (m):		1.35		Scale 1:25	
Client: Liverpool FC				Depth 1.20		0.45		Logged JP	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.07	38.12		Grey CONCRETE paving slab.		
				0.11	38.08		From ground level to 0.07m bgl: Brick wall foundations.		
							MADE GROUND: Brown fine to coarse sand.		
				0.30	37.89		From 0.07m to 0.55m bgl: Sandstone block foundations with a blue membrane surrounding the blocks.		
							MADE GROUND: Light grey gravelly fine to coarse sand. Gravel is fine to coarse, angular to subangular of sandstone.		
							MADE GROUND: Greyish brown sandy gravel with a medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of brick, concrete and sandstone. Cobbles are subangular of brick, concrete and sandstone.		
				0.90	37.29		From 0.55m to 1.20m bgl: Concrete step extending 0.83m from the wall and extends past excavatable depth.		
					MADE GROUND: Greyish brown sandy gravel with a medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of brick, concrete and sandstone. Cobbles are subangular of brick, concrete and sandstone.				
				1.20	36.99		From 0.55m to 1.20m bgl: Concrete step extending 0.83m from the wall and extends past excavatable depth.		
							End of pit at 1.20 m		
Remarks: Hand excavated foundation pit to 1.2m bgl. Position was CAT scanned by a Curtins Engineer. No water strikes encountered during excavation. For more information refer to cross section drawings. Ground level estimated from topographic survey. Co-ordinates estimated from GIS mapping tool.									
Stability: Stable				AGS					

Curtins				Trial Pit Log			Trialpit No HP14 Sheet 1 of 1		
Project Name: LFC Academy				Project No. 088269		Co-ords: 342344.08 - 398529.30		Date 14/11/2025	
Location: Liverpool FC Academy, Liverpool, L33 7ED				Dimensions (m):		0.82		Scale 1:25	
Client: Liverpool FC				Depth 1.10		0.8		Logged LW	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.06	38.15		Grey CONCRETE paving slab.		
				0.15	38.06		From ground level to 0.10m bgl: Brick wall foundations.		
							MADE GROUND: Light brown fine to coarse sand.		
				0.30	37.91		From 0.07m to 0.55m bgl: Sandstone block foundations with a blue membrane surrounding the blocks.		
							MADE GROUND: Light grey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, subangular of sandstone.		
							MADE GROUND: Dark brown slightly clayey gravelly fine to coarse sand with cobbles. Gravel is fine to coarse, subangular of brick and concrete. Cobbles are subangular of brick and concrete.		
					From 0.55m to 1.20m bgl: Concrete step extending 0.10m from the wall and extends down 0.15m to a second concrete step.				
			1.10	37.11	From 0.55m to 1.10m bgl: Second concrete step extending 0.60m and extends past excavatable depth.				
							End of pit at 1.10 m		
Remarks: Hand excavated foundation pit to 1.1m bgl. Position was CAT scanned by a Curtins Engineer. No water strikes encountered during excavation. For more information refer to cross section drawings. Ground level estimated from topographic survey. Co-ordinates estimated from GIS mapping tool.									
Stability: Stable				AGS					

Curtins				Trial Pit Log			Trialpit No HP15 Sheet 1 of 1		
Project Name: LFC Academy				Project No. 088269		Co-ords: 342358.86 - 398509.77		Date 14/11/2025	
Location: Liverpool FC Academy, Liverpool, L33 7ED				Dimensions (m):		0.93		Scale 1:25	
Client: Liverpool FC				Depth 1.20		0.47		Logged LW	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.06	38.15		BRICK surface cover.		
				0.15	38.06		From ground level to 0.06m bgl: Brick wall foundations.		
				0.30	37.91		MADE GROUND: Light brown fine to coarse sand.		
							From 0.07m to 0.55m bgl: Concrete step extending 0.40m from the wall and extends down 0.09m.		
							MADE GROUND: Light grey sandy gravel. Sand is fine to coarse. Gravel is fine to coarse, subangular of sandstone.		
			1.20	37.01	From 0.15m to 0.60m bgl: Sandstone block foundations with a blue membrane surrounding the blocks.				
					MADE GROUND: Dark brown gravelly fine to coarse sand with cobbles. Gravel is fine to coarse, subangular of brick and concrete. Cobbles are subangular of brick and concrete.				
					At 0.60m bgl: Foundations along stairwell end at 0.60m bgl below the sandstone block foundations.				
						From 0.0.60m to 1.12m bgl: Concrete step extending 0.60m and extends past excavatable depth.			
						End of pit at 1.20 m			
Remarks: Hand excavated foundation pit to 1.2m bgl. Position was CAT scanned by a Curtins Engineer. No water strikes encountered during excavation. For more information refer to cross section drawings. Ground level estimated from topographic survey. Co-ordinates estimated from GIS mapping tool.									
Stability: Stable				AGS					

Curtins				Trial Pit Log			Trialpit No SA01 Sheet 1 of 1		
Project Name: LFC Academy				Project No. 088269		Co-ords: 342305.59 - 398526.64 Level: 36.50		Date 11/11/2025	
Location: Liverpool FC Academy, Liverpool, L33 7ED						Dimensions (m): 1.5 0.7		Scale 1:25	
Client: Liverpool FC						Depth 1.20		Logged JP	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.30	36.20		MADE GROUND: Grass cover over light brown fine to medium sand.		
				0.60	35.90		MADE GROUND: Dark brown fine to medium sand.		
				1.20	35.30		Light brown mottled light grey slightly gravelly fine to coarse SAND with a low cobble and boulder content. Gravel is fine to coarse subangular of sandstone and mudstone. Cobbles and boulders are subangular of sandstone and mudstone.		
							----- End of pit at 1.20 m -----		
Remarks: Machine Excavated Trial Pit to 1.2m bgl with BRE Soakaway testing undertaken at 0.70m to 1.20m bgl. Soakaway test failed to infiltrate strata after 180 minutes. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. No water strikes were encountered during excavation.									
Stability: Stable									





Project Name: LFC Academy

Project No.
088269

Co-ords: 342223.89 - 398452.98

Hole Type
WS

Location: Liverpool FC Academy, Liverpool, L33 7ED

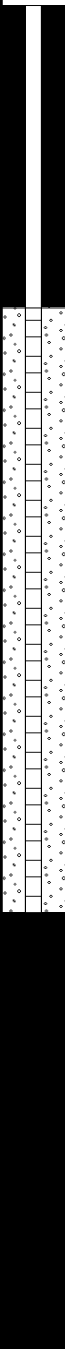
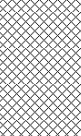
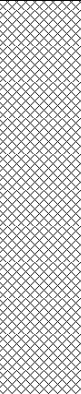
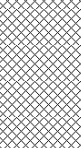
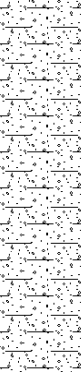
Level: 36.38

Scale
1:25

Client: Liverpool FC

Dates: 14/11/2025 - 14/11/2025

Logged By
LW

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.31	36.07		Grass over TOPSOIL: Light brown sand with frequent rootlets. Sand is fine to medium.	
		0.70	ES		0.80	35.58		MADE GROUND: Dark brown slightly clayey gravelly sand. Sand is fine to coarse. Gravel is fine to coarse, subangular to angular of brick, concrete, limestone, copper wire, charcoal and wood.	
		1.20		N=11 (2,2/2,2,4,3)				MADE GROUND: Dark brown sandy gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to angular of brick, limestone and concrete.	1
		2.00		N=28 (3,3/4,7,9,8)	2.15	34.23		MADE GROUND: Light brown sandy gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to angular of brick, limestone and concrete.	2
					2.45	33.93		MADE GROUND: Black/dark brown sandy gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular to angular of brick, limestone and concrete.	
		3.00		N=40 (5,5/8,8,12,12)	3.00	33.38		Brown organic CLAY. Fragments of wood and plant matter.	3
		3.00 - 3.20	D		3.20	33.18		From 3.00m TO 3.20m bgl: Material has an organic odour. Light brown and cream slightly clayey slightly gravelly SAND. Sand is fine to medium. Gravel is fine to medium, subrounded of sandstone.	
		3.50 - 4.00	B						
		4.00	D						4
		4.00		N=50 (6,6/50 for 280mm)	4.45	31.93		End of borehole at 4.45 m	5

Remarks

Window Sample Borehole to 4.45m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. No water strikes were encountered during excavation.

Project Name: LFC Academy

Project No.
088269

Co-ords: 342249.69 - 398423.18

Hole Type
WS

Location: Liverpool FC Academy, Liverpool, L33 7ED

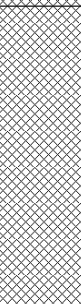
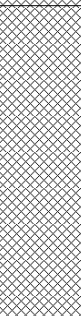
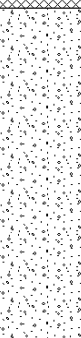
Level: 36.52

Scale
1:25

Client: Liverpool FC

Dates: 13/11/2025 - 13/11/2025

Logged By
JP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30			0.30	36.22		MADE GROUND: Grass cover over light brown fine to medium sand.	1
		1.20		N=9 (2,1/2,2,2,3)	1.30	35.22		MADE GROUND: Dark greyish brown clayey slightly gravelly fine to coarse sand. Gravel is fine to coarse, angular to subangular of brick, concrete and sandstone.	
		1.80 - 1.90 2.00	ES	N=29 (4,7/9,8,6,6)	2.35	34.17		MADE GROUND: Greyish brown sandy gravelly clay. Sand is fine to coarse. Gravel is fine to coarse, subangular of brick, concrete and sandstone.	2
		2.90 - 3.00 3.00	D	50 (4,7/50 for 200mm)	3.45	33.07		Dense light brown slightly gravelly fine to coarse SAND. Gravel is fine to coarse, subangular of quartzite and sandstone.	3
								End of borehole at 3.45 m	4
									5

Remarks

Window Sample Borehole to 3.30m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. No water strikes were encountered during excavation.

Project Name: LFC Academy

Project No.
088269

Co-ords: 342306.23 - 398525.36

Hole Type
WS

Location: Liverpool FC Academy, Liverpool, L33 7ED

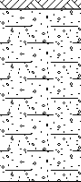
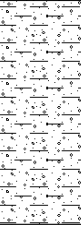
Level: 36.52

Scale
1:25

Client: Liverpool FC

Dates: 14/11/2025 - 14/11/2025

Logged By
LW

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.27	36.25		Grass over TOPSOIL: Light brown sand with frequent rootlets. Sand is fine to medium.	
					0.84	35.68		Brown and dark brown slightly clayey slightly gravelly SAND. Sand is fine to coarse. Gravel is fine to medium, subrounded to subangular of sandstone.	
		1.20 1.20	D	N=32 (2,1/2,18,6,6)	1.58	34.94		Firm brown sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, subrounded of sandstone.	1
		2.00 2.00	B	N=38 (3,6/10,10,8,10)				Reddish brown slightly clayey slightly gravelly SAND. Sand is fine to medium. Gravel is fine to coarse, subrounded of sandstone.	2
		2.50		N=51 (9,13/51 for 275mm)	2.50	34.02	End of borehole at 2.50 m		

Remarks

Window Sample Borehole to 2.50m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. No water strikes were encountered during excavation.

Curtins

5 R W D U \ & R U R P H 01 / R

%RUHKROH 1R

6 K H W R I

3URMHFW 1)25FDGHP\

3URMHFW 1R

&RRUGV

+R01SH
5&

/RFDWLRQ\LYHUSRRRO / ^('

/HYHO

6FDOH

&OLHQW /LYHUSRRRO)&

'DWHV

/RJJHG %\ -3

: HO'DWHUHSWK 7SH				Coring			'HSWK /HYH		HJHQG		6WUDWXP 'HVFULSWLRQ	
6WULNHV				7&5	6&5	54'	P	P				
											'DUN J750\$&\$'\$0	
											0\$'(*5281'9HU\ OLJKW JUH\ VD 6DQG LV ILQH WR FRDUVH *UD VXEDQJXODU RI VDQGVWRQH	
											0\$'(*5281' 'DUN JUH\ VOLJKW WR FRDUVH VDQG *UDYHO LV VXEDQJXODU RI EULFN	
											SPT: N=21 (2,4/7,6,5,3)	
											'DUN EURZQ VOLJKWO\ JUDYHO 6\$1' *UDYHO LV LIQH WR FRDU PXGVWRQH DQG VDQGVWRQH	
											%URZQ VOLJKWO\ JUDYHO ILQH WR FRDUVH *UDYHO LV I VXEURXQGHG RI PXGVWRQH DQ	
											9HU\ GHQVH UHGGLVK EURZQ V FRDUVH 6\$1'	
											SPT: N=50 (4,8/8,10,15,17 FIR 235mm) From 2.40m to 2.95m bgl: No recovery.	
											: HDN UHGGLVK EURZQ SRRUO\ 6\$1'6721()UDFWXUH DUH VXE GHJUHHV SODQDU VPRRWK YH UHGGLVK EURZQ VDQG RQ IUD)UDFWXUH 6HW	
											From 2.95m to 3.16m bgl: Not intact recovered as a slightly clayey sandy gravel of sandstone.	
											From 3.50m to 3.66m bgl: No recovery.	
											From 3.93m to 3.96m bgl: Not intact recovered as a slightly clayey sandy gravel of sandstone.	
											0HGLXP VWURQJ UHGGLVK EUR 6\$1'6721(ZLWK RFFDVLRQDO OI)HOORZ EDQGV DQG D ORZ JUD VXEURXQGHG TXDUW]LWH DQG DUH VXEKRULJQHWHV SODQ RFFDVLRQDOO\ VWHSSHG FO ZLWK UHGGLVK EURZQ VDQG R)UDFWXUH 6HW	
											&RQLQXHG RQ QH[W VKHHW	

5HPDUNV

'\QDPLF 6DPSOH %RUHKROH WRQ URW DU\ ZLWK IGOLORZLQJ WBS FOHPDEJG B /LRQ ZD
&\$7 VFDQQH YGREQ ODD DQG D &XUWVWU\ QWUQHVV ZHUH HQFRXQWPHSHG GXH AGS
VWULNHV ZHUH XQDEOH WR EH UHFRUGHG GXH WR WKH XVH RI ZDWHU IOX AGS

+ R OHS H
5 &

6 F D O H

/RJJHG %\

-(Q G R I E R U H K R O H D W - - - - P



Curtins

5 R W D U \ & R U R P H 02 / R

%RUHKROH 1R

6 K H H W R I

3URMHFW 1)25FDGHP\

3URMHFW 1R

&RRUGV, ~ ~ ~ ~ ~

+RQYSH
5&

/RFDWLRQ\LYHUSRRO / ^('

/HYHO, .

6FDOH

&OLHQW, /LYHUSRRO)&

'DWHV, ~ ~ ~

/RJJHG %\ -3

: HO	DWHUHSWK 7SH 6WULNHV	Coring (7&5 6&5 54'	'HSWK /HYH P P	HJHQQ	6WUDWXP 'HVFULSWLRQ
					'DUN JH\$H0\$&\$'\$0
					0\$'(*5281',9HU\ OLJKW JUH\ VD 6DQG LV ILQH WR FRDUVH *UD VXEDQJXODU RI VDQGVWRQH
					0\$'(*5281', 'DUN JUH\ VOLJKW WR FRDUVH VDQG *UDYHO LV VXEDQJXODU RI EULFN
					SPT: N=4 (1,0/1,1,1,1)
					'DUN JUH\LVK EURZQ VOLJKWO FRDUVH 6\$1' *UDYHO LV ILQH VXEDQJXODU WR VXEURXQGHG
					'HQVH \HOORZLVK EURZQ ILQH SPT: N=24 (1,0/3,6,7,8)
					)LUP JUH\ YHUS<VDQG\ &/
					9HU\ GHQVH UHGGLVK EURZQ I
					5HGGLVK EURZQ ZHD7K KHUHG 6 UHFRYHUHG DV D VDQG\ JUDYH FRDUVH *UDYHO LV ILQH WR F VDQGVWRQH SPT: N=50 (16,9 for 105mm/25,25 for 95mm) From 3.50m to 3.97m bgl: No recovery. From 3.97m to 4.17m bgl: Not intact recovered as a slightly clayey sandy gravel of sandstone.
					0HGLXP VWURQJ UHGGLVK EUR 6\$1'6721()UDFWXUHV DUH VXE GHJUHHV XQGXDWLQJ VPRRV VSDFHG ZLWK VDQG RQ IUDFW
					&RQLQXHG RQ QH[W VKHHW

5HPDUNV

'\QDPLF 6DPSOH %RUHKROH WRQ URFWDU\ ZIRUKH IGOLORZLQJ WBS FOHDEJHG B /LRQ ZD
&\$7 VFDQQH YGREQ ODD DQG D &XUWQHUV (QWUQHUV ZHUH HQFRXQWPHSHHG GXUW AGS WKH G\
VWULNHV ZHUH XQDEOH WR EH UHFRUGHG GXH WR WKH XVH RI ZDWHU IOX AGS GULOOD

Curtins

5 R W D U \ & R U R P H 02 / R

%RUHKROH 1R

6 K H H W R I

3URMHFW 1)25FDGHP\

3URMHFW 1R
..."

&RRUGV, ~ ~ " . . .

+RQYSH
5&

/RFDWLRQ/LYHUSRRO / ^('

/HYHO, .

6 F D O H

&OLHQW, /LYHUSRRO)&

'DWHV, ~ ^ ~

/RJJHG %\ -3

: H O O		D W H U H S W K 7 S H	Coring			' H S W K / H Y H O	H J H Q G		6 W U D W X P ' H V F U L S W L R Q
6 W U L N H V		)	7 & 5	6 & 5	5 4'	P	P		
									6 W U R Q J U H G G L V K E U R Z Q P H G L) U D F W X U H V D U H V X E K R U L J R Q W S O D Q D U U R X J K V X E K R U L J R Q W F O R V H O \ V S D F H G Z L W K V D Q G F) U D F W X U H 6 H W From 5.29m to 5.32m bgl: Subvertical (60 degrees) planar smooth fracture.
		15							From 6.50m to 6.57m bgl: No recovery.
									From 7.17m to 7.26m bgl: Subvertical (75 degrees) planar smooth fracture.
									0 H G L X P V W U R Q J U H G G L V K E U R 6 \$ 1 ' 6 7 2 1 (Z L W K R F F D V L R Q D O V J U D Y H O L Q F O X V L R Q V R I T X D U V P X G V W R Q H) U D F W X U H V D U H K V X E K R U L J R Q W D U H H V S O D Q D U F O R V H O \ W R F O R V H O \ V S D F H G From 7.66m to 7.95m bgl: Subvertical (80 degrees) planar smooth fracture.
		15							From 8.00m to 8.05m bgl: No recovery.
		1							From 8.16m to 8.24m bgl: Not intact recovered as a slightly clayey sandy gravel of sandstone.
									6 W U R Q J U H G G L V K E U R Z Q P H G L 6 \$ 1 ' 6 7 2 1 (Z L W K D O R Z J U D Y H O V X E U R X Q G H G T X D U W J L W H V D Q) U D F W X U H V D U H K R U L J R Q W D O G H J U H H V S O D Q D U V P R R W K Y V S D F H G Z L W K V D Q G R Q I U D F W 6 H W From 8.51m to 8.56m bgl: Angled (50 degrees) planar smooth fracture.
									From 9.36m to 9.38m bgl: Subvertical (85 degrees) planar smooth fracture.

&RQWLQXHG RQ QH[W VKHHW

5HPDUNV

'\QDPLF 6DPSON %RUHKROH WRQ URRWDO\ ZLWUHG IGOLOOZLQJ WBS FOHPDEJHG B /LRQ ZD
&\$7 VFDQQH YGREQ ODD DQG D &XUWUWUW (QWUQHVV ZHUH HQFRXQWPSOHG GXUW AGS WVKH G\
VWULNHV ZHUH XQDEOH WR EH UHFRUGHG GXH WR WKH XVH RI ZDWHU IOXN GULOOD

Curtins

5 R W D U \ & R U R P H 02 / R

%RUHKROH 1R

6 K H H W R I

3URMHFW 1)25FDGHP\

3URMHFW 1R
" " "

&RRUGV, ~ ~ " . . .

+R O T S H
5 &

/RFDWLRLQ/LYHUSRRO / ^('

6 F D O H
"

/HYHO, "

&OLHQW, /LYHUSRRO)&

'DWHV, ~ ^ ~

/RJJHG %\ -3

: HO	DWHUHSWK 6WULNHV	7SH)	Coring			'HSWK /HYH P P	HJHQG	6WUDWXP 'HVFULSWLRQ	
			7 & 5	6 & 5	54'				

From 11.91m to 11.93m bgl: Not intact recovered as a slightly clayey sandy gravel of sandstone.

0HGLXP VWURQJ UHGGLVK EUR
6\$1'6721(ZLWK RFFDVLRLQDO V
JUDYHO LQFOXVLRQV RI TXDUV
PXGVWRQH)UDFWXUH 6HW
From 12.39m to 12.44m bgl: Not intact recovered as a slightly clayey sandy gravel of sandstone.
From 12.71m to 12.75m bgl: Vertical planar smooth fracture.

From 13.17m to 13.21m bgl: Vertical planar smooth fracture.

6WURQJ UHGGLVK EURZQ PHGL
6\$1'6721(ZLWK D ORZ JUDYHO
VXEURXQGHG TXDUW]LWH VDO
)UDFWXUH 6HW

(QG RI ERUHKROH DW P

Curtins

5 R W D U \ & R U R P H 03 / R

%RUHKROH 1R

6 K H H W R I

3URMHFW 1)25FDGHP\

3URMHFW 1R
...~"

&RRUGV, ~ " " " " " "

+RQYSH
5&

/RFDWLRQ\LYHUSRRO / ^('

/HYHO, ~

6FDOH
~

&OLHQW, /LYHUSRRO)&

'DWHV, ~ ~

/RJJHG %\ -3

: HO		DWHUHSWK 7SH		Coring			'HSWK /HYH		HJHQG		6WUDWXP 'HVFULSWLRQ	
6WULNHV		)		7&5	6&5	54'	P	P				
		(6									0\$'(*5281', *UDVV FRYHU RYHU VOLJKWO\ FOD\H\ ILQH WR PHG	
											0\$'(*5281', 'DUN EURZQ VOLJK VOLJKWO\ FOD\H\ ILQH WR FRD WR FRDUVH DQJXODU WR VXEI	
											'DUN UHGGLVK EURZQ ILQH WR	
											SPT: N=23 (1,3/4,6,6,7)	
											*UH\ VOLJKWO\ JUDYHOO\ ILQH *UDYHO LV ILQH WR FRDUVH V VXEURXQG HG RI VDQGVWRQH TXDUW]LWH	
		%									6RIW JUH\ VDQG\ VLOW\ &/ SPT: N=5 (1,1/1,1,1,2)	
											6RIW YHU\ VDQG\ VOLJKWO\ VL	
											5HGGLVK EURZQ VOLJKWO\ FO 6\$1' SPT: N=50 (6,9/9, 37,4 for 155mm)	
		15									6WURQJ UHGGLVK EURZQ PHGL 6\$1'6721(ZLWK QR GHVFHUQLE)UDFWXUHV DUH VXEKRU]RQWD VPRRWK YHU\ FORVHO\ WR FO VDQG RQ WKH IUDFWXUH VXUI	
											From 4.87m to 5.03m bgl: Vertical undulating smooth fracture.	
											&RQWLQXHG RQ QH[W VKHHW	

5HPDUNV
'\QDPLF 6DP SOH %RUHKROH WR P EJO 3RVLQJ RQ 35 BODVQLDQ & DC
(QJLQH R ZDWHU VWULNHV ZHUH HQFRXQWHUHG GXULQJ H[FDYDWLRQ



Curtins

5 R W D U \ & R U R P H 103 / R

%RUHKROH 1R

6 K H H W R I

3URMHFW 1)25FDGHP\

3URMHFW 1R
...~"

&RRUGV, ~ " " " " " "

+R0YSH
5&

/RFDWLRQ\LYHUSRRO / ^('

/HYHO, . .

6FDOH
~

&OLHQW, /LYHUSRRO)&

'DWHV, ~ ~

/RJJHG %\ -3

: HDN UHGGLVK EURZQ PHGLXP FHPHQWHG7B\$1'6UDFWXUH DU KRULJRQWDO WR VXEKRULJQW DQG XQGODWLQJ URXJK YHU VSDFHG ZLWK VDQG RQ IUDFW 6HW		: HDN UHGGLVK EURZQ PHGLXP FHPHQWHG7B\$1'6UDFWXUH 6HW		0HGLXP VWURQJ UHGGLVK EUR PRWWOZGPHGLXP JUDLQ7B1(6\$1 ZLWK RFFDVLRQDO VXEURXQG)UDFWXUH 6HW	
From 5.09m to 5.34m bgl: Sandstone is light grey with yellow staining on bedding planes with thin laminations.		From 5.89m to 5.92m bgl: Not intact recovered as a slightly clayey sandy gravel of sandstone.		From 6.30m to 6.98m bgl: Subvertical fracture (80 degrees) planar rough with non intact gravel surround.	
6WURQJ OLJKW JUH\ PRWWOZG 6\$1'6721(		6WURQJ OLJKW JUH\ PRWWOZG 6\$1'6721(		6WURQJ OLJKW JUH\ PRWWOZG 6\$1'6721(	
From 7.22m to 7.28m bgl: Angled (45 degrees) undulating smooth fracture.		From 7.22m to 7.28m bgl: Angled (45 degrees) undulating smooth fracture.		From 7.22m to 7.28m bgl: Angled (45 degrees) undulating smooth fracture.	
6WURQJ OLJKW JUH\ PRWWOZG 6\$1'6721(		6WURQJ OLJKW JUH\ PRWWOZG 6\$1'6721(		6WURQJ OLJKW JUH\ PRWWOZG 6\$1'6721(	
6WURQJ OLJKW JUH\ PRWWOZG 6\$1'6721(		6WURQJ OLJKW JUH\ PRWWOZG 6\$1'6721(		6WURQJ OLJKW JUH\ PRWWOZG 6\$1'6721(	
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Curtins

5 R W D U \ & R U R P H 03 / R

%RUHKROH 1R

6 K H H W R I

3URMHFW 1)25FDGHP\

3URMHFW 1R
...~"

&RRUGV, ~ " " ~ ^ "

+R01SH
5&

/RFDWLRQ\LYHUSRRO)&

6FDOH

/HYHO, ~ ~

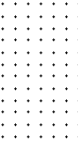
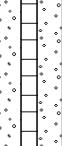
6FDOH
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&OLHQW, /LYHUSRRO)&

'DWHV, ~ ~

/RJJHG %\
-3

: HO	DW	HU	SW	K 7	SH	Coring			'HSW	K /HYH	HJH	QG	6WUDWXP	'HVFULSW	LRQ
6WULNHV				)		7&5	6&5	54'	P	P					



(QG RI ERUHKROH DW ~ ~ P

5HPDUNV

'\QDPLF 6DPSOH %RUHKROH WR ~ P EJO 38VWLRQHQHQHQ 35D BODQLHQ&XC
(QJLQH R ZDWHU VWULNHV ZHUH HQFRXQWHUHG GXULQJ H[FDYDWLRQ



Curtins

%RUHKROH

%RUHKROH 1R

7R J

6KHHW RI

3URMHFW 1)25FDGHP\

3URMHFW 1R

&RRUGV

+ROVSH

%+

/RFDWLRQ\LYHUSRRO / ^('

/HYHO

6FDOH

&OLHQW\ /LYHUSRRO)&

'DWHV

/RJJHG %\ -3

: HO	DW	HU	6DPSOHV	DQG	QW	WLV	QX	HSWK	/HYH	Q	HJHQG	6WUDWXP	'HVFULSWLRQ
6WULNHV	HSWK	ASH	5HVXOWV	P	P								
													*UDVV R23H2, /LJKW EURZQ V VOLJKWO\ JUDYHOO\ VDQG ZLV LV ILQH WR PHGLXP *UDYHO LV VXEURXQG HG RI VDQGVWRQH / 0\$' (*5281' %URZQ FOD\H\ JUD ZLWK ORZ FREEOH FRQWHQW *UDYHO LV ILQH WR FRDUVH V EULFN FKDUFRDO ZRRG DQG EULFN
			(6										0\$' (*5281' %ODFN VDQG\ VOL FQD6DQG LV ILQH WR FRDUVH FRDUVH VXEDQJXODU RI FKDU <i>From 0.70m to 1.10m bgl: Material has a slight hydrocarbon odour and a burnt odour.</i>
			1										0\$' (*5281' %ODFN FOD\H\ VOL VDQG 6DQG LV ILQH WR FRDUV FRDUVH VXEDQJXODU RI FKDU
			1										%URZQ DQG EODFN FOD\H\ VOL 6DQG LV ILQH WR FRDUVH
													/LJKW EURZQ 6\$1' 6DQG LV ILQ
													)LUP EURZQ VDQG\ VO\$KDDG ILQH WR FRDUVH *UDYHO LV I VXEURXQG HG RI VDQGVWRQH D
			1										
													5HGGLVK EURZQ DQG JUH\LVK LV ILQH WR PHGLXP
													&UHDP 6\$2'6(
													(QG RI ERUHKROH DW P

5HPDUNV

:LQGRZ 6DPSOH %RUHKROH WR P EJO 3RVLWLRQ 35 DODQDQG &XQ (QJLQH URXQGZDWHU VWULNH HQFRXQWHUHG DW P EJO GHVFULEHG D /ORZ V



Project Name: LFC Academy

Project No.
088269

Co-ords: 342464.68 - 398564.84

Hole Type
BH

Location: Liverpool FC Academy, Liverpool, L33 7ED

Level: 38.62

Scale
1:25

Client: Liverpool FC

Dates: 10/11/2025 - 11/11/2025

Logged By
JP

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10			0.10	38.52		MADE GROUND - TOPSOIL: Grass cover over dark brown slightly clayey fine to coarse sand with occasional rootlets.	
		0.40 - 0.50	ES			38.02		MADE GROUND: Dark brown slightly gravelly slightly clayey fine to coarse sand. Gravel is fine to coarse angular to subangular of brick.	
					0.60			Greyish brown fine to medium SAND.	
		0.80 - 1.20	B		0.80	37.82		Dense dark reddish brown slightly gravelly fine to coarse SAND. Gravel is fine to coarse, subangular to subrounded of sandstone.	1
		1.20		N=39 (3,6/5,10,11,13)				At 1.2m bgl: Slight water ingress at the base of hand pit.	
								From 1.55m to 1.80m bgl: Strata becomes very gravelly with cobbles.	
		2.00		N=20 (4,4/5,5,5,5)	1.80	36.82		Light greyish brown slightly gravelly fine to medium SAND. Gravel is fine to coarse, subangular to subrounded of sandstone.	2
		2.20 - 2.30	D		2.00	36.62		Firm grey very sandy CLAY.	
		2.60 - 3.00	B		2.55	36.07		Grey slightly clayey fine to medium SAND.	
		3.50 - 3.90	B		3.00	35.62		Dense light grey mottled lightly brown slightly clayey slightly gravelly fine to coarse SAND. Gravel is fine to coarse, subangular to subrounded of sandstone.	3
		3.85		50 (25 for 5mm/50 for 15mm)	3.80 3.85	34.82 34.77		Very dense reddish brown fine to coarse SAND. End of borehole at 3.80 m	4
									5

Remarks

Dynamic Sample Borehole to 3.85m bgl with Rotarty Core follow-on to 15.5m bgl. Position was GPR cleared and CAT scanned by Avoim Maa and a Curtins Engineer. Water strikes were unable to be noted during drilling due to the use of water flush.

Project Name: LFC Academy

Project No.
088269

Co-ords: 342273.98 - 398389.03

Hole Type
RC

Location: Liverpool FC Academy, Liverpool, L33 7ED

Level: 38.19

Scale
1:25

Client: Liverpool FC

Dates: 19/11/2025 - 20/11/2025

Logged By
JP

Well	Water Strikes	Depth (m)	Type / Fl	Coring			Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD					
		0.50 - 0.60	ES				0.30	37.89		MADE GROUND - TOPSOIL: Grass cover over dark brown slightly clayey fine to coarse sand with occasional rootlets.	
										MADE GROUND: Dark brown clayey gravelly fine to coarse sand with cobbles. Gravel is fine to coarse angular to subangular of brick, concrete, sandstone and coal. Cobbles are subangular of brick and concrete.	
										SPT: N=10 (1,1/1,3,3,3)	1
											2
										SPT: N=25 (2,3/3,6,8,8)	
											3
		3.50 - 3.60	ES							SPT: N=14 (2,2/3,3,3,5)	
							4.00	34.19		Stiff light brown and light grey sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse, subangular to subrounded of mudstone and sandstone.	4
		4.00 - 4.70	B								
							4.70	33.49		Light brown mottled light grey slightly gravelly fine to coarse SAND with a low cobble content. Gravel is fine to coarse subangular of sandstone and mudstone. Cobbles are subangular of sandstone and mudstone.	5
		4.80 - 4.90	D								

Continued on next sheet

Remarks

Dynamic Sample Borehole to 5.4m bgl, with follow-on rotary core drilling to 14.0m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. Water strikes were encountered during the dynamic sample drilling, strikes were unable to be recorded due to the use of water flush drilling. Ground level estimated from topographic survey. Co-ordinates estimated from GIS mapping tool.

Project Name: LFC Academy

Project No.
088269

Co-ords: 342273.98 - 398389.03

Hole Type
RC

Location: Liverpool FC Academy, Liverpool, L33 7ED

Level: 38.19

Scale
1:25

Client: Liverpool FC

Dates: 19/11/2025 - 20/11/2025

Logged By
JP

Well	Water Strikes	Depth (m)	Type / FI	Coring			Depth (m)	Level (m)	Legend	Stratum Description	
				TCR	SCR	RQD					
		5.10 - 5.20	D				5.05	33.14		Very dense reddish brown gravelly coarse SAND with bands of light grey medium sand. Gravel is fine to coarse, subangular of sandstone.	6
		5.40 - 6.50	NI	73	63	17	5.53	32.66		SPT: N=50 (11, 14/50 for 80mm) From 5.40m to 5.53m bgl: Not intact recovered as a slightly clayey sandy gravel of sandstone.	
			33				5.86	32.33		Weak reddish brown medium SANDSTONE. Fractures are horizontal to subhorizontal (0-5 degrees) planar smooth with very close spacing and reddish brown sand on fracture surfaces (Fracture Set 1).	
			14							Weak reddish brown poorly cemented coarse SANDSTONE with a high gravel content of subrounded sandstone and mudstone. Fractures are subhorizontal (5-20 degrees) undulating rough, very closely to closely spaced (Fracture Set 2).	
		6.50 - 8.00	NR	69	51	17	6.96	31.23		From 6.50m to 6.96m bgl: No recovery.	
			15							Weak reddish brown medium SANDSTONE. Fracture Set 1.	
			NI				7.92	30.27		From 7.85m to 7.92m bgl: Not intact recovered as a slightly clayey sandy gravel of sandstone.	
		8.00 - 9.50	13							Medium strong reddish brown SANDSTONE with a low gravel content of subrounded mudstone, sandstone and quartzite. Fractures are subhorizontal (5-15 degrees) planar and undulating smooth closely to widely spaced (Fracture Set 3).	
			NR	89	89	89				From 8.00m to 8.17m bgl: No recovery.	
			4								
			NR							From 9.50m to 9.64m bgl: No recovery.	
			9								

Continued on next sheet

Remarks

Dynamic Sample Borehole to 5.4m bgl, with follow-on rotary core drilling to 14.0m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. Water strikes were encountered during the dynamic sample drilling, strikes were unable to be recorded due to the use of water flush drilling. Ground level estimated from topographic survey. Co-ordinates estimated from GIS mapping tool.

Project Name: LFC Academy

Project No.
088269

Co-ords: 342273.98 - 398389.03

Hole Type
RC

Location: Liverpool FC Academy, Liverpool, L33 7ED

Level: 38.19

Scale
1:25

Client: Liverpool FC

Dates: 19/11/2025 - 20/11/2025

Logged By
JP

Well	Water Strikes	Depth (m)	Type / FI	Coring			Depth (m)	Level (m)	Legend	Stratum Description					
				TCR	SCR	RQD									
		9.50 - 11.00	NI	91	86	76	11.60	26.59		From 10.10m to 10.13m bgl: Not intact recovered as a slightly clayey sandy gravel of sandstone.	11				
			4												
			NI												
		11.00 - 12.50	8	100	100	47				12.10	26.09		Weak reddish brown medium SANDSTONE. Fracture Set 1.	12	
			44												
			8												
		12.50 - 14.00	3	100	94	85				13		From 12.75m to 12.90m bgl: Not intact recovered as a slightly clayey sandy gravel of sandstone.	13		
			NI												
			4												
		14.00 - 15.50	12	100	94	78				14		From 13.42m to 13.44m bgl: Not intact recovered as a slightly clayey sandy gravel of sandstone.	14		
			NI												
			NI												
														Continued on next sheet	15

Continued on next sheet

Remarks

Dynamic Sample Borehole to 5.4m bgl, with follow-on rotary core drilling to 14.0m bgl. Position was GPR cleared and CAT scanned by Avoin Maa and a Curtins Engineer. Water strikes were encountered during the dynamic sample drilling, strikes were unable to be recorded due to the use of water flush drilling. Ground level estimated from topographic survey. Co-ordinates estimated from GIS mapping tool.



Appendix C – Chemical Laboratory Test Results

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 25/13290
Issue Number: 1

Date: 02 December, 2025

Client: Curtins Consulting (Manchester)
Merchant Exchange
17-19 Whitworth Street
Manchester
UK
M1 5WG

Project Manager: Jonathan Provis/Lucy Woods/Niall Farnworth
Project Name: LFC Academy
Project Ref: 88269
Order No: 28123
Date Samples Received: 18/11/25
Date Instructions Received: 19/11/25
Date Analysis Completed: 02/12/25

Approved by:



Richard Wong
Client Manager

Envirolab Job Number: 25/13290

Client Project Name: LFC Academy

Client Project Ref: 88269

Lab Sample ID	25/13290/1	25/13290/4						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS02	RBH01								
Depth to Top	2.90	0.90								
Depth To Bottom	3.00	1.00								
Date Sampled	13-Nov-25	13-Nov-25								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4A	4A								
% Moisture at <40C _A	11.8	18.8						% w/w	0.1	A-T-044
% Stones >10mm _A	<0.1	2.4						% w/w	0.1	A-T-044
pH _D ^{M#}	7.01	7.10						pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	<0.01						g/l	0.01	A-T-026s
Cyanide (total) _A ^{M#}	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	0.97	8.46						% w/w	0.14	A-T-032s
Arsenic _D ^{M#}	<1	3						mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0						mg/kg	1	A-T-027s
Cadmium _D	<1.0	<1.0						mg/kg	1	A-T-024s
Copper _D ^{M#}	5	13						mg/kg	1	A-T-024s
Chromium _D ^{M#}	7	7						mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1						mg/kg	1	A-T-040s
Lead _D ^{M#}	4	26						mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17						mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	2	9						mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1						mg/kg	1	A-T-024s
Zinc _D ^{M#}	9	57						mg/kg	1	A-T-024s

Envirolab Job Number: 25/13290

Client Project Name: LFC Academy

Client Project Ref: 88269

Lab Sample ID	25/13290/1	25/13290/4						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS02	RBH01								
Depth to Top	2.90	0.90								
Depth To Bottom	3.00	1.00								
Date Sampled	13-Nov-25	13-Nov-25								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4A	4A								
Asbestos in Soil (inc. matrix)										
Asbestos in soil [#]	NAD	NAD								A-T-045
Asbestos Matrix (visual) _D	-	-								A-T-045
Asbestos Matrix (microscope) _D	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A								A-T-045

Envirolab Job Number: 25/13290

Client Project Name: LFC Academy

Client Project Ref: 88269

Lab Sample ID	25/13290/1	25/13290/4						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	WS02	RBH01								
Depth to Top	2.90	0.90								
Depth To Bottom	3.00	1.00								
Date Sampled	13-Nov-25	13-Nov-25								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4A	4A								
PAH-16MS										
Acenaphthene _A ^{M#}	0.15	<0.01						mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01						mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.15	<0.02						mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.48	<0.04						mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.49	<0.04						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.60	0.06						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.31	<0.05						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.23	<0.07						mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.58	<0.06						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.06	<0.04						mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	1.18	<0.08						mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.10	<0.01						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.29	<0.03						mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03						mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.70	<0.03						mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	1.09	<0.07						mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	6.41	<0.08						mg/kg	0.01	A-T-019s

Envirolab Job Number: 25/13290

Client Project Name: LFC Academy

Client Project Ref: 88269

Lab Sample ID	25/13290/1	25/13290/4								
Client Sample No										
Client Sample ID	WS02	RBH01								
Depth to Top	2.90	0.90								
Depth To Bottom	3.00	1.00								
Date Sampled	13-Nov-25	13-Nov-25								
Sample Type	SOIL - ES	SOIL - ES								
Sample Matrix Code	4A	4A								
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1						mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1						mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	2						mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	2						mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	18	59						mg/kg	1	A-T-055s
Total Aliphatics _A	18	64						mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	1	2						mg/kg	1	A-T-055s
Aro >C10-C12 _A	1	<1						mg/kg	1	A-T-055s
Aro >C12-C16 _A	5	6						mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	7	2						mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	18	12						mg/kg	1	A-T-055s
Total Aromatics _A	32	23						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	50	87						mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s

Report Notes

General

- This report shall not be reproduced, except in full, without written approval from Envirolab.
- The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
- The results reported herein relate only to the material supplied to the laboratory.
- The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
- Analytical results reflect the quality of the sample at the time of analysis only.
- Opinions and Interpretations expressed are outside our scope of accreditation.
- A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
- If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
- Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript “#”	Accredited to ISO 17025
Superscript “M”	Accredited to MCertS
Superscript “U”	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript “A”	Analysis performed on as-received Sample
Subscript “D”	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript “D” on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript “A”	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis

“Trace Asbestos Identified” will be reported if there is not enough present to verify the type.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs

Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as “% stones >10mm”.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any “D” subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.

Results “with Clean up” indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.

Where these humic substances have been identified in any IDs from “TPH CWG with clean up” please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Curtins Consulting (Manchester), Merchant Exchange, 17-19 Whitworth Street , Manchester, UK, M1 5WG	Project No:	25/13290
Project:	LFC Academy	Date Received:	19/11/2025 (am)
Clients Project No:	88269	Cool Box Temperatures (°C):	1.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	25/13290/1	25/13290/4
Client Sample No		
Client Sample ID/Depth	WS02 2.90-3.00m	RBH01 0.90-1.00m
Date Sampled	13/11/25	13/11/25
A-T-019s	25/11/2025	26/11/2025
A-T-022s	24/11/2025	25/11/2025
A-T-024s	28/11/2025	29/11/2025
A-T-026s	26/11/2025	26/11/2025
A-T-027s	27/11/2025	01/12/2025
A-T-031s	26/11/2025	02/12/2025
A-T-032s	26/11/2025	26/11/2025
A-T-040s	26/11/2025	26/11/2025
A-T-042sTCN	24/11/2025	26/11/2025
A-T-044	21/11/2025	24/11/2025
A-T-045	20/11/2025	24/11/2025
A-T-050s	27/11/2025	27/11/2025
A-T-055s	25/11/2025	26/11/2025
Calc-As Recd	25/11/2025	26/11/2025

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 25/13360
Issue Number: 1

Date: 03 December, 2025

Client: Curtins Consulting (Manchester)
Merchant Exchange
17-19 Whitworth Street
Manchester
UK
M1 5WG

Project Manager: Jonathan Provis/Lucy Woods/Niall Farnworth
Project Name: LFC Academy
Project Ref: B088269
Order No: 28224
Date Samples Received: 19/11/25
Date Instructions Received: 20/11/25
Date Analysis Completed: 03/12/25

Approved by:



Amy Riding
Client Manager

Envirolab Job Number: 25/13360

Client Project Name: LFC Academy

Client Project Ref: B088269

Lab Sample ID	25/13360/1	25/13360/2	25/13360/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH02	WS01	WS04							
Depth to Top	0.55	0.70	1.00							
Depth To Bottom										
Date Sampled	14-Nov-25	14-Nov-25	14-Nov-25							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	4A							
% Moisture at <40C _A	11.6	13.2	13.0					% w/w	0.1	A-T-044
% Stones >10mm _A	2.2	9.9	10.2					% w/w	0.1	A-T-044
pH _D ^{M#}	7.79	8.25	7.89					pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.40	0.05	0.08					g/l	0.01	A-T-026s
Cyanide (total) _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2					mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	1.11	1.08	1.77					% w/w	0.14	A-T-032s
Arsenic _D ^{M#}	6	6	3					mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0					mg/kg	1	A-T-027s
Cadmium _D	<1.0	<1.0	<1.0					mg/kg	1	A-T-024s
Copper _D ^{M#}	13	21	17					mg/kg	1	A-T-024s
Chromium _D ^{M#}	10	9	7					mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1					mg/kg	1	A-T-040s
Lead _D ^{M#}	18	65	23					mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17					mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	9	10	6					mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1					mg/kg	1	A-T-024s
Zinc _D ^{M#}	37	48	31					mg/kg	1	A-T-024s

Envirolab Job Number: 25/13360

Client Project Name: LFC Academy

Client Project Ref: B088269

Lab Sample ID	25/13360/1	25/13360/2	25/13360/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH02	WS01	WS04							
Depth to Top	0.55	0.70	1.00							
Depth To Bottom										
Date Sampled	14-Nov-25	14-Nov-25	14-Nov-25							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	4A							
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD	NAD							A-T-045
Asbestos Matrix (visual) _D	-	-	-							A-T-045
Asbestos Matrix (microscope) _D	-	-	-							A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	N/A							A-T-045

Envirolab Job Number: 25/13360

Client Project Name: LFC Academy

Client Project Ref: B088269

Lab Sample ID	25/13360/1	25/13360/2	25/13360/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH02	WS01	WS04							
Depth to Top	0.55	0.70	1.00							
Depth To Bottom										
Date Sampled	14-Nov-25	14-Nov-25	14-Nov-25							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	4A							
PAH-16MS										
Acenaphthene _A ^{M#}	<0.01	0.12	<0.01					mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	0.02	<0.01					mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	<0.02	0.17	<0.02					mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.06	0.85	0.05					mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.07	0.79	0.07					mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.08	1.06	0.09					mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	<0.05	0.43	<0.05					mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	<0.07	0.37	<0.07					mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.07	1.03	0.07					mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	0.10	<0.04					mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.10	1.84	0.10					mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	0.08	<0.01					mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.03	0.44	0.04					mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	0.03	<0.03					mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.03	0.67	0.05					mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.09	1.93	0.10					mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	0.53	9.93	0.57					mg/kg	0.01	A-T-019s

Envirolab Job Number: 25/13360

Client Project Name: LFC Academy

Client Project Ref: B088269

Lab Sample ID	25/13360/1	25/13360/2	25/13360/3					Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH02	WS01	WS04							
Depth to Top	0.55	0.70	1.00							
Depth To Bottom										
Date Sampled	14-Nov-25	14-Nov-25	14-Nov-25							
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES							
Sample Matrix Code	5A	4A	4A							
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1					mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	<1	1	<1					mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	4	7	5					mg/kg	1	A-T-055s
Total Aliphatics _A	4	8	5					mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1					mg/kg	1	A-T-055s
Aro >C12-C16 _A	<1	2	2					mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	<1	10	5					mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	2	36	8					mg/kg	1	A-T-055s
Total Aromatics _A	2	49	15					mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	7	57	21					mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01					mg/kg	0.01	A-T-022s

Report Notes

General

- This report shall not be reproduced, except in full, without written approval from Envirolab.
- The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
- The results reported herein relate only to the material supplied to the laboratory.
- The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
- Analytical results reflect the quality of the sample at the time of analysis only.
- Opinions and Interpretations expressed are outside our scope of accreditation.
- A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
- If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
- Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript “#”	Accredited to ISO 17025
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None of the above symbols	Analysis unaccredited
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Subscript “D”	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript “D” on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript “A”	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis

“Trace Asbestos Identified” will be reported if there is not enough present to verify the type.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs

Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as “% stones >10mm”.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any “D” subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.

Results “with Clean up” indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.

Where these humic substances have been identified in any IDs from “TPH CWG with clean up” please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Curtins Consulting (Manchester), Merchant Exchange, 17-19 Whitworth Street , Manchester, UK, M1 5WG	Project No:	25/13360
Project:	LFC Academy	Date Received:	20/11/2025 (am)
Clients Project No:	B088269	Cool Box Temperatures (°C):	3.6

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	25/13360/1	25/13360/2	25/13360/3
Client Sample No			
Client Sample ID/Depth	RBH02 0.55m	WS01 0.70m	WS04 1.00m
Date Sampled	14/11/25	14/11/25	14/11/25
A-T-019s	28/11/2025	28/11/2025	28/11/2025
A-T-022s	26/11/2025	26/11/2025	26/11/2025
A-T-024s	02/12/2025	02/12/2025	02/12/2025
A-T-026s	01/12/2025	01/12/2025	01/12/2025
A-T-027s	02/12/2025	02/12/2025	02/12/2025
A-T-031s	03/12/2025	03/12/2025	03/12/2025
A-T-032s	03/12/2025	03/12/2025	03/12/2025
A-T-040s	01/12/2025	01/12/2025	01/12/2025
A-T-042sTCN	25/11/2025	25/11/2025	25/11/2025
A-T-044	27/11/2025	27/11/2025	27/11/2025
A-T-045	24/11/2025	24/11/2025	24/11/2025
A-T-050s	01/12/2025	01/12/2025	01/12/2025
A-T-055s	27/11/2025	27/11/2025	27/11/2025
Calc-As Recd	27/11/2025	27/11/2025	27/11/2025

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 25/13660
Issue Number: 1

Date: 08 December, 2025

Client: Curtins Consulting (Manchester)
Merchant Exchange
17-19 Whitworth Street
Manchester
UK
M1 5WG

Project Manager: Jonathan Provis
Project Name: LFC Academy
Project Ref: 088269
Order No: 28354
Date Samples Received: 21/11/25
Date Instructions Received: 26/11/25
Date Analysis Completed: 08/12/25

Approved by:



Gemma Berrisford
Deputy Client Services Supervisor

Envirolab Job Number: 25/13660

Client Project Name: LFC Academy

Client Project Ref: 088269

Lab Sample ID	25/13660/1	25/13660/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH06	RBH06								
Depth to Top	0.50	3.50								
Depth To Bottom	0.60	3.60								
Date Sampled	20-Nov-25	20-Nov-25								
Sample Type	SOIL	SOIL								
Sample Matrix Code	4ABE	5AB								
% Moisture at <40C _A	12.1	12.6						% w/w	0.1	A-T-044
% Stones >10mm _A	4.2	<0.1						% w/w	0.1	A-T-044
pH _D ^{M#}	8.36	8.44						pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	0.09	0.08						g/l	0.01	A-T-026s
Cyanide (total) _A ^{M#}	<1	<1						mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2						mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	2.76	2.62						% w/w	0.14	A-T-032s
Arsenic _D ^{M#}	8	10						mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	1.8	1.9						mg/kg	1	A-T-027s
Cadmium _D	<1.0	<1.0						mg/kg	1	A-T-024s
Copper _D ^{M#}	34	33						mg/kg	1	A-T-024s
Chromium _D ^{M#}	13	16						mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1						mg/kg	1	A-T-040s
Lead _D ^{M#}	185	135						mg/kg	1	A-T-024s
Mercury _D	<0.17	0.36						mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	13	16						mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1						mg/kg	1	A-T-024s
Zinc _D ^{M#}	269	79						mg/kg	1	A-T-024s

Envirolab Job Number: 25/13660

Client Project Name: LFC Academy

Client Project Ref: 088269

Lab Sample ID	25/13660/1	25/13660/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH06	RBH06								
Depth to Top	0.50	3.50								
Depth To Bottom	0.60	3.60								
Date Sampled	20-Nov-25	20-Nov-25								
Sample Type	SOIL	SOIL								
Sample Matrix Code	4ABE	5AB								
Asbestos in Soil (inc. matrix)										
Asbestos in soil _D [#]	NAD	NAD								A-T-045
Asbestos Matrix (visual) _D	-	-								A-T-045
Asbestos Matrix (microscope) _D	-	-								A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A								A-T-045

Envirolab Job Number: 25/13660

Client Project Name: LFC Academy

Client Project Ref: 088269

Lab Sample ID	25/13660/1	25/13660/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH06	RBH06								
Depth to Top	0.50	3.50								
Depth To Bottom	0.60	3.60								
Date Sampled	20-Nov-25	20-Nov-25								
Sample Type	SOIL	SOIL								
Sample Matrix Code	4ABE	5AB								
PAH-16MS										
Acenaphthene _A ^{M#}	0.64	0.22						mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	0.03	<0.01						mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.72	0.17						mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	1.65	0.58						mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	1.23	0.61						mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	1.56	0.58						mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.76	0.40						mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.53	0.23						mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	1.95	0.79						mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	0.19	0.07						mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	4.08	1.25						mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	0.33	0.11						mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.77	0.40						mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	0.05	0.19						mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	2.20	0.98						mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	4.05	1.25						mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	20.7	7.83						mg/kg	0.01	A-T-019s

Envirolab Job Number: 25/13660

Client Project Name: LFC Academy

Client Project Ref: 088269

Lab Sample ID	25/13660/1	25/13660/2								
Client Sample No										
Client Sample ID	RBH06	RBH06								
Depth to Top	0.50	3.50								
Depth To Bottom	0.60	3.60								
Date Sampled	20-Nov-25	20-Nov-25								
Sample Type	SOIL	SOIL								
Sample Matrix Code	4ABE	5AB								
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01						mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<1	<10						mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<10						mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<10						mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	2	<10						mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	17	212						mg/kg	1	A-T-055s
Total Aliphatics _A	20	212						mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<5	<10						mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<10						mg/kg	1	A-T-055s
Aro >C12-C16 _A	4	<10						mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	20	23						mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	63	76						mg/kg	1	A-T-055s
Total Aromatics _A	87	98						mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	107	310						mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01						mg/kg	0.01	A-T-022s

Report Notes

General

- This report shall not be reproduced, except in full, without written approval from Envirolab.
- The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
- The results reported herein relate only to the material supplied to the laboratory.
- The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
- Analytical results reflect the quality of the sample at the time of analysis only.
- Opinions and Interpretations expressed are outside our scope of accreditation.
- A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
- If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
- Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript “#”	Accredited to ISO 17025
Superscript “M”	Accredited to MCertS
Superscript “U”	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript “A”	Analysis performed on as-received Sample
Subscript “D”	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript “D” on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript “A”	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis

“Trace Asbestos Identified” will be reported if there is not enough present to verify the type.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs

Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as “% stones >10mm”.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any “D” subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.

Results “with Clean up” indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.

Where these humic substances have been identified in any IDs from “TPH CWG with clean up” please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Curtins Consulting (Manchester), Merchant Exchange, 17-19 Whitworth Street , Manchester, UK, M1 5WG	Project No:	25/13660
Project:	LFC Academy	Date Received:	26/11/2025 (am)
Clients Project No:	088269	Cool Box Temperatures (°C):	10.2

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	25/13660/1	25/13660/2
Client Sample No		
Client Sample ID/Depth	RBH06 0.50-0.60m	RBH06 3.50-3.60m
Date Sampled	20/11/25	20/11/25
A-T-019s	03/12/2025	03/12/2025
A-T-022s	03/12/2025	03/12/2025
A-T-024s	04/12/2025	04/12/2025
A-T-026s	04/12/2025	04/12/2025
A-T-027s	04/12/2025	04/12/2025
A-T-031s	04/12/2025	04/12/2025
A-T-032s	05/12/2025	05/12/2025
A-T-040s	04/12/2025	04/12/2025
A-T-042sTCN	04/12/2025	04/12/2025
A-T-044	02/12/2025	02/12/2025
A-T-045	28/11/2025	28/11/2025
A-T-050s	08/12/2025	08/12/2025
A-T-055s	04/12/2025	04/12/2025
Calc-As Recd	04/12/2025	04/12/2025

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 26/00466
Issue Number: 1

Date: 26 January, 2026

Client: Curtins Consulting (Manchester)
Merchant Exchange
17-19 Whitworth Street
Manchester
UK
M1 5WG

Project Manager: Niall Farnworth/Russell Taylor
Project Name: LFC Academy
Project Ref: B088269
Order No: 29352
Date Samples Received: 16/01/26
Date Instructions Received: 19/01/26
Date Analysis Completed: 26/01/26

Approved by:



Zipporah Bannister
Client Manager

Envirolab Job Number: 26/00466

Client Project Name: LFC Academy

Client Project Ref: B088269

Lab Sample ID	26/00466/1	26/00466/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH03	RBH02								
Depth to Top	9.00	6.00								
Depth To Bottom	10.00	7.00								
Date Sampled	16-Jan-26	16-Jan-26								
Sample Type	WATER - EW	WATER - EW								
Sample Matrix Code	N/A	N/A								
pH (w) _A [#]	6.93	6.37						pH	0.01	A-T-031w
pH BRE (w) _A [#]	6.93	6.37						pH	0.01	A-T-031w
Hardness Total _A [#]	281.3	362.5						mg/l Ca CO ₃	4	A-T-049w
Ammoniacal nitrogen as N (w) _A [#]	0.05	0.06						mg/l	0.05	A-T-033w
Sulphate (w) _A [#]	84	93						mg/l	1	A-T-026w
Sulphate BRE (w) _A [#]	84	93						mg/l	1	A-T-026w
Cyanide (total) (w) _A [#]	<0.005	<0.005						mg/l	0.005	A-T-042wTCN
Phenols - Total by HPLC (w) _A	0.01	<0.01						mg/l	0.01	A-T-050w
Sulphide (w) _A	<0.1	<0.1						mg/l	0.1	A-T-043-w
DOC - Dissolved Organic Carbon (w) _A [#]	6.2	16.9						mg/l	2	A-T-032w
Arsenic (dissolved) _A [#]	<1	<1						µg/l	1	A-T-025w
Boron (dissolved) _A [#]	45	119						µg/l	10	A-T-025w
Cadmium (dissolved) _A [#]	<0.2	<0.2						µg/l	0.2	A-T-025w
Calcium (dissolved) _A [#]	82.3	114.8						mg/l	1	A-T-049w
Copper (dissolved) _A [#]	7	16						µg/l	4	A-T-025w
Chromium (dissolved) _A [#]	<1	4						µg/l	1	A-T-025w
Lead (dissolved) _A [#]	0.2	0.3						µg/l	0.1	A-T-025w
Mercury (dissolved) _A [#]	<0.1	<0.1						µg/l	0.1	A-T-025w
Nickel (dissolved) _A [#]	35	13						µg/l	2	A-T-025w
Selenium (dissolved) _A [#]	7	1						µg/l	1	A-T-025w
Zinc (dissolved) _A [#]	43	29						µg/l	2	A-T-025w

Envirolab Job Number: 26/00466

Client Project Name: LFC Academy

Client Project Ref: B088269

Lab Sample ID	26/00466/1	26/00466/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH03	RBH02								
Depth to Top	9.00	6.00								
Depth To Bottom	10.00	7.00								
Date Sampled	16-Jan-26	16-Jan-26								
Sample Type	WATER - EW	WATER - EW								
Sample Matrix Code	N/A	N/A								
PAH 16MS (w)										
Acenaphthene (w) _A [#]	<0.01	<0.01						µg/l	0.01	A-T-019w
Acenaphthylene (w) _A [#]	<0.01	<0.01						µg/l	0.01	A-T-019w
Anthracene (w) _A [#]	<0.01	0.02						µg/l	0.01	A-T-019w
Benzo(a)anthracene (w) _A [#]	<0.01	0.06						µg/l	0.01	A-T-019w
Benzo(a)pyrene (w) _A [#]	<0.01	0.04						µg/l	0.01	A-T-019w
Benzo(b)fluoranthene (w) _A [#]	<0.01	0.05						µg/l	0.01	A-T-019w
Benzo(ghi)perylene (w) _A [#]	<0.01	0.02						µg/l	0.01	A-T-019w
Benzo(k)fluoranthene (w) _A [#]	<0.01	0.02						µg/l	0.01	A-T-019w
Chrysene (w) _A [#]	0.01	0.06						µg/l	0.01	A-T-019w
Dibenzo(ah)anthracene (w) _A [#]	<0.01	<0.01						µg/l	0.01	A-T-019w
Fluoranthene (w) _A [#]	0.02	0.11						µg/l	0.01	A-T-019w
Fluorene (w) _A [#]	<0.01	0.01						µg/l	0.01	A-T-019w
Indeno(123-cd)pyrene (w) _A [#]	<0.01	0.02						µg/l	0.01	A-T-019w
Naphthalene (w) _A [#]	<0.01	<0.01						µg/l	0.01	A-T-019w
Phenanthrene (w) _A [#]	<0.01	0.06						µg/l	0.01	A-T-019w
Pyrene (w) _A [#]	0.02	0.11						µg/l	0.01	A-T-019w
Total PAH 16MS (w)_A[#]	0.05	0.58						µg/l	0.01	A-T-019w

Envirolab Job Number: 26/00466

Client Project Name: LFC Academy

Client Project Ref: B088269

Lab Sample ID	26/00466/1	26/00466/2						Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH03	RBH02								
Depth to Top	9.00	6.00								
Depth To Bottom	10.00	7.00								
Date Sampled	16-Jan-26	16-Jan-26								
Sample Type	WATER - EW	WATER - EW								
Sample Matrix Code	N/A	N/A								
TPH CWG (w) with Clean Up										
Ali >C5-C6 (w) _A [#]	<1	<1						µg/l	1	A-T-022w
Ali >C6-C8 (w) _A [#]	<1	<1						µg/l	1	A-T-022w
Ali >C8-C10 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Ali >C10-C12 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Ali >C12-C16 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Ali >C16-C21 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Ali >C21-C35 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Total Aliphatics (w) _A [#]	<5	<5						µg/l	5	Calc-As Recd
Aro >C5-C7 (w) _A [#]	<1	<1						µg/l	1	A-T-022w
Aro >C7-C8 (w) _A [#]	<1	<1						µg/l	1	A-T-022w
Aro >C8-C10 (w) _A	<5	<5						µg/l	5	A-T-055w
Aro >C10-C12 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Aro >C12-C16 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Aro >C16-C21 (w) _A [#]	<5	<5						µg/l	5	A-T-055w
Aro >C21-C35 (w) _A [#]	<10	<10						µg/l	10	A-T-055w
Total Aromatics (w) _A [#]	<10	<10						µg/l	10	Calc-As Recd
TPH (Ali & Aro >C5-C35) (w) _A	<10	<10						µg/l	10	Calc-As Recd
BTEX - Benzene (w) _A [#]	<1	<1						µg/l	1	A-T-022w
BTEX - Toluene (w) _A [#]	<1	<1						µg/l	1	A-T-022w
BTEX - Ethyl Benzene (w) _A [#]	<1	<1						µg/l	1	A-T-022w
BTEX - m & p Xylene (w) _A [#]	<1	<1						µg/l	1	A-T-022w
BTEX - o Xylene (w) _A [#]	<1	<1						µg/l	1	A-T-022w
MTBE (w) _A [#]	<1	<1						µg/l	1	A-T-022w

Report Notes

General

/7KLV UHSRUW VKDOO QRW EH UHSURGXFHG H[FHSW LQ IXOO ZLWKRXW ZULWWHQ DSSURYDO IUR
/The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
/7KH UHVXOWV UHSRUWHG KHUHLQ UHODWH RQ\ WR WKH PDWHULDO VXSOLHG WR WKH ODERUD
/7KH UHVLGXH RI DQ\ VDP SOHV FRQWDLQH G ZLWKLQ WKLV UHSRUW D four weeks after the initial G ZLWKLQ V
scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of six months after the initial Asbestos testing is
completed.
/\$QDO\WLFDO UHVXOWV UHIOHFW WKH TXDOLW\ RI WKH VDP SOH DW WKH WLPH RI DQDO\VLV RQ\
/2SLQLRQV DQG ,QWHUSUHWDWLRQV H[SUHVVHG DUH RXWVLGH RXU VFRSH RI DFFUHLGLWDWLRQ
/\$ GHYLDWLQJ VDP SOH UHSRUW LV DSSHQGHG DQG ZLOO LQGLFDWH LI VFRSHEDJ RULHQWLRQ KDYH
record of the concentration at the time of sampling and, as a result, may be invalid.
/,I D VDP SOH LV RXWVLGH RI WKH FDOLEUDWLRQ UDQJH RU DIIHFWHG GHIILQDWLRQ (LOD) QIRV WKHQ L
raised.
/6XEFRQWUDFWHG \$QDO\VLV, 3OHDVH VHH WKH DSSHQGHG UHSRUW IRU DQ\ GHYLDWLRQV FXUUH

Key

6XSHUVFULSW ³	Accredited to ISO 17025
6XSHUVFULSW ³⁰	Accredited to MCertS
6XSHUVFULSW ³⁸	Individual result not accredited
None of the above symbols	Analysis unaccredited
6XEVFULSW ^{3\$}	Analysis performed on as-received Sample
6XEVFULSW ^{3'}	Analysis performed on the dried sample, crushed to pass 2mm sieve.
6XEVFULSW ^{3''} RC	Analysis performed on a dried aliquot of sample provided.
6XEVFULSW ^{3A}	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification ±not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis

37UDFH \$VEHVWRV ,GHQWLILHG ZLOO EH UHSRUWHG LI WKHUH LV QRW HQRXJK SUHVHQW WR YHU

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs

Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as '% stones >10mm'.

)RU VDP SOHV ZLWK ODWUL[&RGH ^ WKH ZKROH VDP SOH LV GULHG DQG FUXVKHG SULRU WR DQDO

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any "D" subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.

5HVXOWV³ ZLWK &OHDQ XS' LQGLFDWHV VDP SOHV FOHDQH G XS ZLWK 6LOLFD GXULQJ H[WUDFWLR

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.

:KHUH WKHVH KXPLF VXEVDQFHV KDYH EHHQ LGHQWLILHG LQ DQ\ ,V IURP is NOT included in the FOHDQ
quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client: Curtins Consulting (Manchester), Merchant Exchange, 17-19 Whitworth Street ,
Manchester, UK, M1 5WG

Project No: 26/00466

Date Received: 19/01/2026 (am)

Project: LFC Academy

Cool Box Temperatures (°C): 5.5

Clients Project No: B088269

Lab Sample ID	26/00466/1	26/00466/2
Client Sample No		
Client Sample ID/Depth	RBH03 9.00-10.00m	RBH02 6.00-7.00m
Date Sampled	16/01/26	16/01/26
Deviation Code		
F	✓	✓

Key

F Maximum holding time exceeded between sampling date and analysis for analytes listed below

HOLDING TIME EXCEEDANCES

Lab Sample ID	26/00466/1	26/00466/2
Client Sample No		
Client Sample ID/Depth	RBH03 9.00-10.00m	RBH02 6.00-7.00m
Date Sampled	16/01/26	16/01/26
pH (w)	✓	✓
pH BRE (w)	✓	✓

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	26/00466/1	26/00466/2
Client Sample No		
Client Sample ID/Depth	RBH03 9.00-10.00m	RBH02 6.00-7.00m
Date Sampled	16/01/26	16/01/26
A-T-019w	21/01/2026	21/01/2026
A-T-022w	21/01/2026	21/01/2026
A-T-025w	21/01/2026	21/01/2026
A-T-026w	21/01/2026	21/01/2026
A-T-031w	21/01/2026	21/01/2026
A-T-032w	26/01/2026	26/01/2026
A-T-033w	21/01/2026	21/01/2026
A-T-042wTCN	20/01/2026	20/01/2026
A-T-043-w	21/01/2026	21/01/2026
A-T-049w	23/01/2026	23/01/2026
A-T-050w	22/01/2026	22/01/2026
A-T-055w	21/01/2026	21/01/2026
Calc-As Recd	21/01/2026	21/01/2026

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

FINAL ANALYTICAL TEST REPORT

Envirolab Job Number: 25/13127
Issue Number: 1

Date: 27 November, 2025

Client: Curtins Consulting (Manchester)
Merchant Exchange
17-19 Whitworth Street
Manchester
UK
M1 5WG

Project Manager: EBMA/Jonathan Provis/Niall Farnworth
Project Name: LFC Academy
Project Ref: 88269
Order No: 28123
Date Samples Received: 14/11/25
Date Instructions Received: 17/11/25
Date Analysis Completed: 27/11/25

Approved by:



Amy Riding
Client Manager

Envirolab Job Number: 25/13127

Client Project Name: LFC Academy

Client Project Ref: 88269

Lab Sample ID	25/13127/1	25/13127/2	25/13127/3	25/13127/4	25/13127/5	25/13127/6	25/13127/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH05	RBH03	HP02	HP01	HP07	HP08	HP11			
Depth to Top	0.40	0.60	0.50	0.70	0.40	0.50	0.20			
Depth To Bottom	0.50	0.70	0.60	0.80	0.50	0.60	0.30			
Date Sampled	10-Nov-25	11-Nov-25	12-Nov-25	12-Nov-25	12-Nov-25	12-Nov-25	12-Nov-25			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	4AE	4AE	4A	1A	4A	4A			
% Stones >10mm _A	<0.1	<0.1	4.9	10.7	<0.1	0.7	<0.1	% w/w	0.1	A-T-044
pH _D ^{M#}	7.14	7.63	7.80	8.01	8.07	7.90	8.41	pH	0.01	A-T-031s
Sulphate (water sol 2:1) _D ^{M#}	<0.01	<0.01	0.08	0.06	0.02	0.02	0.01	g/l	0.01	A-T-026s
Cyanide (total) _A ^{M#}	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-042sTCN
Phenols - Total by HPLC _A	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	mg/kg	0.2	A-T-050s
Organic Matter _D ^{M#}	3.05	2.57	1.93	3.25	0.29	0.80	1.67	% w/w	0.14	A-T-032s
Arsenic _D ^{M#}	9	5	3	4	7	<1	1	mg/kg	1	A-T-024s
Boron (water soluble) _D ^{M#}	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-027s
Cadmium _D	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/kg	1	A-T-024s
Copper _D ^{M#}	27	33	22	21	25	3	6	mg/kg	1	A-T-024s
Chromium _D ^{M#}	17	9	9	8	11	4	5	mg/kg	1	A-T-024s
Chromium (hexavalent) _D	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-040s
Lead _D ^{M#}	68	50	24	40	120	5	12	mg/kg	1	A-T-024s
Mercury _D	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	mg/kg	0.17	A-T-024s
Nickel _D ^{M#}	15	10	9	10	12	3	4	mg/kg	1	A-T-024s
Selenium _D ^{M#}	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-024s
Zinc _D ^{M#}	138	56	35	49	58	10	14	mg/kg	1	A-T-024s

Envirolab Job Number: 25/13127

Client Project Name: LFC Academy

Client Project Ref: 88269

Lab Sample ID	25/13127/1	25/13127/2	25/13127/3	25/13127/4	25/13127/5	25/13127/6	25/13127/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH05	RBH03	HP02	HP01	HP07	HP08	HP11			
Depth to Top	0.40	0.60	0.50	0.70	0.40	0.50	0.20			
Depth To Bottom	0.50	0.70	0.60	0.80	0.50	0.60	0.30			
Date Sampled	10-Nov-25	11-Nov-25	12-Nov-25	12-Nov-25	12-Nov-25	12-Nov-25	12-Nov-25			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	4AE	4AE	4A	1A	4A	4A			
Asbestos in Soil (inc. matrix) ^										
Asbestos in soil _D #	NAD	NAD	NAD	NAD	NAD	NAD	Amosite			A-T-045
Asbestos Matrix (visual) _D	-	-	-	-	-	-	-			A-T-045
Asbestos Matrix (microscope) _D	-	-	-	-	-	-	Loose Fibres			A-T-045
Asbestos ACM - Suitable for Water Absorption Test? _D	N/A	N/A	N/A	N/A	N/A	N/A	N/A			A-T-045
Asbestos in Soil Quantification % (Hand Picking & Weighing)										
Asbestos in soil % composition (hand picking and weighing) _D	-	-	-	-	-	-	<0.001	% w/w	0.001	A-T-054

Envirolab Job Number: 25/13127

Client Project Name: LFC Academy

Client Project Ref: 88269

Lab Sample ID	25/13127/1	25/13127/2	25/13127/3	25/13127/4	25/13127/5	25/13127/6	25/13127/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH05	RBH03	HP02	HP01	HP07	HP08	HP11			
Depth to Top	0.40	0.60	0.50	0.70	0.40	0.50	0.20			
Depth To Bottom	0.50	0.70	0.60	0.80	0.50	0.60	0.30			
Date Sampled	10-Nov-25	11-Nov-25	12-Nov-25	12-Nov-25	12-Nov-25	12-Nov-25	12-Nov-25			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	4AE	4AE	4A	1A	4A	4A			
PAH-16MS										
Acenaphthene _A ^{M#}	0.01	<0.01	0.01	0.24	<0.01	<0.01	0.60	mg/kg	0.01	A-T-019s
Acenaphthylene _A ^{M#}	<0.01	<0.01	<0.01	0.06	<0.01	<0.01	0.03	mg/kg	0.01	A-T-019s
Anthracene _A ^{M#}	0.05	<0.02	<0.02	0.37	<0.02	<0.02	0.74	mg/kg	0.02	A-T-019s
Benzo(a)anthracene _A ^{M#}	0.28	0.08	0.08	1.41	<0.04	<0.04	1.87	mg/kg	0.04	A-T-019s
Benzo(a)pyrene _A ^{M#}	0.32	0.09	0.10	1.32	<0.04	0.06	1.90	mg/kg	0.04	A-T-019s
Benzo(b)fluoranthene _A ^{M#}	0.36	0.11	0.12	1.57	<0.05	0.07	2.21	mg/kg	0.05	A-T-019s
Benzo(ghi)perylene _A ^{M#}	0.18	0.06	0.06	0.64	<0.05	<0.05	1.02	mg/kg	0.05	A-T-019s
Benzo(k)fluoranthene _A ^{M#}	0.13	<0.07	<0.07	0.53	<0.07	<0.07	0.72	mg/kg	0.07	A-T-019s
Chrysene _A ^{M#}	0.30	0.09	0.10	1.58	<0.06	<0.06	2.13	mg/kg	0.06	A-T-019s
Dibenzo(ah)anthracene _A ^{M#}	<0.04	<0.04	<0.04	0.15	<0.04	<0.04	0.26	mg/kg	0.04	A-T-019s
Fluoranthene _A ^{M#}	0.57	0.15	0.16	3.45	<0.08	<0.08	4.60	mg/kg	0.08	A-T-019s
Fluorene _A ^{M#}	<0.01	<0.01	<0.01	0.20	<0.01	<0.01	0.39	mg/kg	0.01	A-T-019s
Indeno(123-cd)pyrene _A ^{M#}	0.20	0.06	0.05	0.69	<0.03	<0.03	1.03	mg/kg	0.03	A-T-019s
Naphthalene _A ^{M#}	<0.03	<0.03	<0.03	0.04	<0.03	<0.03	0.34	mg/kg	0.03	A-T-019s
Phenanthrene _A ^{M#}	0.17	0.05	0.09	1.47	<0.03	<0.03	3.47	mg/kg	0.03	A-T-019s
Pyrene _A ^{M#}	0.51	0.14	0.16	3.47	<0.07	<0.07	4.20	mg/kg	0.07	A-T-019s
Total PAH-16MS _A ^{M#}	3.08	0.83	0.93	17.2	<0.08	0.13	25.5	mg/kg	0.01	A-T-019s

Envirolab Job Number: 25/13127

Client Project Name: LFC Academy

Client Project Ref: 88269

Lab Sample ID	25/13127/1	25/13127/2	25/13127/3	25/13127/4	25/13127/5	25/13127/6	25/13127/7	Units	Limit of Detection	Method ref
Client Sample No										
Client Sample ID	RBH05	RBH03	HP02	HP01	HP07	HP08	HP11			
Depth to Top	0.40	0.60	0.50	0.70	0.40	0.50	0.20			
Depth To Bottom	0.50	0.70	0.60	0.80	0.50	0.60	0.30			
Date Sampled	10-Nov-25	11-Nov-25	12-Nov-25	12-Nov-25	12-Nov-25	12-Nov-25	12-Nov-25			
Sample Type	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES	SOIL - ES			
Sample Matrix Code	4AE	4AE	4AE	4A	1A	4A	4A			
TPH CWG with Clean Up										
Ali >C5-C6 _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C6-C8 _A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Ali >C8-C10 _A	<2	<2	<2	<2	<2	<2	<2	mg/kg	1	A-T-055s
Ali >C10-C12 _A ^{M#}	<1	<1	<1	<1	<1	<1	<1	mg/kg	1	A-T-055s
Ali >C12-C16 _A ^{M#}	<1	<1	<1	<1	<1	<1	2	mg/kg	1	A-T-055s
Ali >C16-C21 _A ^{M#}	1	<1	<1	2	<1	<1	2	mg/kg	1	A-T-055s
Ali >C21-C35 _A ^{M#}	9	7	8	15	1	2	30	mg/kg	1	A-T-055s
Total Aliphatics _A	10	7	8	17	<2	2	35	mg/kg	1	Calc-As Recd
Aro >C5-C7 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C7-C8 _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
Aro >C8-C10 _A	<9	<9	<9	<9	<9	<9	<9	mg/kg	1	A-T-055s
Aro >C10-C12 _A	<1	<1	<1	<1	<1	<1	3	mg/kg	1	A-T-055s
Aro >C12-C16 _A	3	<1	<1	9	<1	<1	38	mg/kg	1	A-T-055s
Aro >C16-C21 _A ^{M#}	23	1	3	37	<1	<1	69	mg/kg	1	A-T-055s
Aro >C21-C35 _A ^{M#}	69	3	11	106	2	<1	132	mg/kg	1	A-T-055s
Total Aromatics _A	96	<9	14	152	<9	<9	243	mg/kg	1	Calc-As Recd
TPH (Ali & Aro >C5-C35) _A	106	11	22	169	<9	<9	278	mg/kg	1	Calc-As Recd
BTEX - Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Toluene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - Ethyl Benzene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - m & p Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
BTEX - o Xylene _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s
MTBE _A [#]	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/kg	0.01	A-T-022s

Report Notes

General

- This report shall not be reproduced, except in full, without written approval from Envirolab.
- The client Sample No, Client Sample ID, Depth to top, Depth to Bottom and Date Sampled are all provided by the client and can affect the validity of results.
- The results reported herein relate only to the material supplied to the laboratory.
- The residue of any samples contained within this report, and any received within the same delivery, will be disposed of **four weeks** after the initial scheduling. For samples tested for Asbestos we will retain a portion of the dried sample for a minimum of **six months** after the initial Asbestos testing is completed.
- Analytical results reflect the quality of the sample at the time of analysis only.
- Opinions and Interpretations expressed are outside our scope of accreditation.
- A deviating sample report is appended and will indicate if samples or tests have been found to be deviating. Any test results affected may not be an accurate record of the concentration at the time of sampling and, as a result, may be invalid.
- If a sample is outside of the calibration range or affected by interferences then it may need diluting. This will result in the limit of detection (LOD) being raised.
- Subcontracted Analysis: Please see the appended report for any deviations, current LODs and accreditation status of the test.

Key

Superscript “#”	Accredited to ISO 17025
Superscript “M”	Accredited to MCertS
Superscript “U”	Individual result not accredited
None of the above symbols	Analysis unaccredited
Subscript “A”	Analysis performed on as-received Sample
Subscript “D”	Analysis performed on the dried sample, crushed to pass 2mm sieve.
Subscript “D” on Asbestos	Analysis performed on a dried aliquot of sample provided.
Subscript “A”	Analysis has dependant options against results. Details appear in the comments of your Sample receipt
IS	Insufficient Sample for analysis
US	Unsuitable Sample for analysis
NDP	No Determination Possible
NAD	No Asbestos Detected
Trace	Asbestos found not suitable for Gravimetric Quantification – not enough to accurately weigh.
N/A	Not applicable

Asbestos

Identification: Asbestos in soil analysis is performed on a dried aliquot of the submitted sample and cannot guarantee to identify asbestos if only present in small numbers as discrete fibres/fragments in the original sample.

Stones etc. are not removed from the sample prior to analysis

“Trace Asbestos Identified” will be reported if there is not enough present to verify the type.

Assigned Matrix Codes

1	SAND	6	CLAY/LOAM	A	Contains Stones
2	LOAM	7	OTHER	B	Contains Construction Rubble
3	CLAY	8	Asbestos Bulk (Only Asbestos ID accredited)	C	Contains visible hydrocarbons
4	LOAM/SAND	9	Incinerator Ash (some Metals accredited)	D	Contains glass / metal
5	SAND/CLAY			E	Contains roots / twigs

Note: 7,8,9 matrices are not covered by our ISO 17025 or MCertS accreditation, unless stated above.

Soil Chemical Analysis:

All results are reported as dry weight (<40°C).

For samples with Matrix Codes 1 - 6 natural stones, brick and concrete fragments >10mm and any extraneous material (visible glass, metal or twigs) are removed and excluded from the sample prior to analysis and reported results corrected to a whole sample basis. This is reported as “% stones >10mm”.

For samples with Matrix Code 7 the whole sample is dried and crushed prior to analysis and this supersedes any “A” subscripts

All analysis is performed on the sample as received for soil samples which are positive for asbestos or the client has informed asbestos may be present and/or if they are from outside the European Union and this supersedes any “D” subscripts.

TPH by method A-T-007:

For waters, free and visible oils are excluded from the sample used for analysis, so the reported result represents the dissolved phase only.

Results “with Clean up” indicates samples cleaned up with Silica during extraction.

EPH CWG (method A-T-055) from TPH CWG:

EPH CWG results have humics mathematically subtracted through instrument calculation.

Where these humic substances have been identified in any IDs from “TPH CWG with clean up” please note that the concentration is **NOT** included in the quantified results but present in the ID for information.

Electrical Conductivity of water by method A-T-037:

Results greater than 12900µS/cm @ 25°C / 11550µS/cm @ 20°C fall outside the calibration range and as such are unaccredited.

Please contact your client manager if you require any further information.

Envirolab Deviating Samples Report

Hattersley Science & Technology Park, Stockport Road, Hattersley, SK14 3QU
Tel. 0161 368 4921 email. ask@envlab.co.uk

Client:	Curtins Consulting (Manchester), Merchant Exchange, 17-19 Whitworth Street , Manchester, UK, M1 5WG	Project No:	25/13127
Project:	LFC Academy	Date Received:	17/11/2025 (am)
Clients Project No:	88269	Cool Box Temperatures (°C):	11.5

NO DEVIATIONS IDENTIFIED

If, at any point before reaching the laboratory, the temperature of the samples has breached those set in published standards, e.g. BS-EN 5667-3, ISO 18400-102:2017, then the concentration of any affected analytes may differ from that at the time of sampling.

Envirolab Analysis Dates

Lab Sample ID	25/13127/1	25/13127/2	25/13127/3	25/13127/4	25/13127/5	25/13127/6	25/13127/7
Client Sample No							
Client Sample ID/Depth	RBH05 0.40-0.50m	RBH03 0.60-0.70m	HP02 0.50-0.60m	HP01 0.70-0.80m	HP07 0.40-0.50m	HP08 0.50-0.60m	HP11 0.20-0.30m
Date Sampled	10/11/25	11/11/25	12/11/25	12/11/25	12/11/25	12/11/25	12/11/25
A-T-019s	20/11/2025	20/11/2025	20/11/2025	20/11/2025	20/11/2025	20/11/2025	20/11/2025
A-T-022s	21/11/2025	21/11/2025	21/11/2025	21/11/2025	21/11/2025	21/11/2025	21/11/2025
A-T-024s	27/11/2025	27/11/2025	27/11/2025	27/11/2025	27/11/2025	27/11/2025	27/11/2025
A-T-026s	24/11/2025	24/11/2025	24/11/2025	24/11/2025	24/11/2025	24/11/2025	24/11/2025
A-T-027s	27/11/2025	27/11/2025	27/11/2025	27/11/2025	27/11/2025	27/11/2025	27/11/2025
A-T-031s	23/11/2025	23/11/2025	23/11/2025	23/11/2025	23/11/2025	23/11/2025	27/11/2025
A-T-032s	24/11/2025	24/11/2025	24/11/2025	24/11/2025	24/11/2025	24/11/2025	24/11/2025
A-T-040s	24/11/2025	24/11/2025	24/11/2025	24/11/2025	24/11/2025	24/11/2025	24/11/2025
A-T-042sTCN	21/11/2025	21/11/2025	21/11/2025	21/11/2025	21/11/2025	21/11/2025	21/11/2025
A-T-044	19/11/2025	19/11/2025	19/11/2025	19/11/2025	19/11/2025	19/11/2025	19/11/2025
A-T-045	18/11/2025	18/11/2025	18/11/2025	18/11/2025	18/11/2025	18/11/2025	18/11/2025
A-T-050s	24/11/2025	24/11/2025	24/11/2025	24/11/2025	24/11/2025	24/11/2025	24/11/2025
A-T-054							19/11/2025
A-T-055s	21/11/2025	21/11/2025	21/11/2025	21/11/2025	21/11/2025	21/11/2025	21/11/2025
Calc-As Recd	21/11/2025	21/11/2025	21/11/2025	21/11/2025	21/11/2025	21/11/2025	21/11/2025

The above dates are the analysis completion dates, please note that these are not necessarily the date that the analysis was weighed/extracted.

End of Report

Appendix D – Geotechnical Laboratory Test Results

Curtins
Merchant Exchange
17-19 Whitworth Street West
Manchester

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t:

e: jonathan.provis@curtins.com
niall.farnworth@curtins.com; EBMA.testing@curtins.com

t: 01923 225404
f: 01923 237404
e: info-i2analytical@normecgroup.com

Analytical Report Number : 25-067971

Project / Site name:	LFC Academy	Samples received on:	21/11/2025
Your job number:	88269	Samples instructed on/ Analysis started on:	17/12/2025
Your order number:	28909	Analysis completed by:	09/01/2026
Report Issue Number:	1	Report issued on:	09/01/2026
Samples Analysed:	16 soil samples		



Signed:

Rachel Chappell
Key Account Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting
air	- once the analysis is complete

Excel copies of reports are only valid when accompanied by this PDF certificate.

Retention period for records and reports is minimum 6 years from the date of issue of the final report.
Some records may be kept for longer according to other legal/best practice requirements.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 25-067971

Project / Site name: LFC Academy

Your Order No: 28909

Lab Sample Number	784525	784526	784527	784528	784529
Sample Reference	RBH01	RBH01	RBH02	RBH03	RBH03
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	1.40-1.50	2.30-2.40	1.20-2.00	2.00-2.10	3.50-3.60
Date Sampled	Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	11	13	15	14	14
Total mass of sample received	kg	0.1	NONE	1.4	1.4	1.5	1.3	0.2

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	7.2	7.3	7	5.6	6.2
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	12	6.3	49	32	97
Water Soluble SO ₄ 16hr extraction (2:1) Leachate Equivalent	mg/l	1.25	MCERTS	5.9	3.16	24.3	16	48.3
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	5.7	6.1	17	1.5	4.2
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0

Heavy Metals / Metalloids

Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	< 2.5	140	4.8	56
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	< 5.0	280	9.5	110

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 25-067971

Project / Site name: LFC Academy

Your Order No: 28909

Lab Sample Number	784530	784531	784532	784533	784534
Sample Reference	RBH03	RBH04	RBH04	RBH05	RBH05
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	4.20-4.30	1.70	4.10	0.80-1.20	3.50-3.90
Date Sampled	Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	15	11	15	17	11
Total mass of sample received	kg	0.1	NONE	1.8	1.2	0.6	0.3	0.3

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	6.5	8.4	4.5	7.2	6.2
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	66	21	58	10	27
Water Soluble SO ₄ 16hr extraction (2:1) Leachate Equivalent	mg/l	1.25	MCERTS	33.2	10.5	28.8	5.08	13.3
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	2.7	2	3	7.2	3.3
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 2.0	4.9	< 2.0	< 2.0	15
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	7.5

Heavy Metals / Metalloids

Magnesium (leachate equivalent)	mg/l	2.5	NONE	28	< 2.5	< 2.5	< 2.5	7.8
Magnesium (water soluble)	mg/kg	5	NONE	56	< 5.0	< 5.0	< 5.0	16

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 25-067971

Project / Site name: LFC Academy

Your Order No: 28909

Lab Sample Number	784535	784536	784537	784538	784539
Sample Reference	RBH06	RBH06	RBH06	WS01	WS01
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Water Matrix	N/A	N/A	N/A	N/A	N/A
Depth (m)	4.00-4.70	4.80-4.90	5.10-5.20	3.00-3.20	4.00
Date Sampled	Deviating	Deviating	Deviating	Deviating	Deviating
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status		

Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	14	11	14	41	10
Total mass of sample received	kg	0.1	NONE	0.2	1.2	1.5	0.2	0.6

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	6.1	7	7.1	4.6	6.8
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	100	34	59	730	37
Water Soluble SO ₄ 16hr extraction (2:1) Leachate Equivalent	mg/l	1.25	MCERTS	51	17.1	29.5	364	18.3
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	3	2.2	2.6	17	5
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	11	6.9	6	7	2.4
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	5.6	< 5.0	< 5.0	< 5.0	< 5.0

Heavy Metals / Metalloids

Magnesium (leachate equivalent)	mg/l	2.5	NONE	7.2	4.2	5.3	30	4.1
Magnesium (water soluble)	mg/kg	5	NONE	15	8.3	11	61	8.3

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number: 25-067971

Project / Site name: LFC Academy

Your Order No: 28909

Lab Sample Number	784540			
Sample Reference	WS02			
Sample Number	None Supplied			
Water Matrix	N/A			
Depth (m)	2.90-3.00			
Date Sampled	Deviating			
Time Taken	None Supplied			
Analytical Parameter (Soil Analysis)	Units	Test Limit of detection	Test Accreditation Status	

Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	18
Total mass of sample received	kg	0.1	NONE	0.9

General Inorganics

pH (L099)	pH Units	N/A	MCERTS	6.6
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	22
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	10.9
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	13
Water Soluble Nitrate (2:1) as NO ₃	mg/kg	2	NONE	< 2.0
Water Soluble Nitrate (2:1) as NO ₃ (leachate equivalent)	mg/l	5	NONE	< 5.0

Heavy Metals / Metalloids

Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
784525	RBH01	None Supplied	1.40-1.50	Brown sand with gravel
784526	RBH01	None Supplied	2.30-2.40	Brown sand with gravel
784527	RBH02	None Supplied	1.20-2.00	Brown clay
784528	RBH03	None Supplied	2.00-2.10	Brown clay and sand
784529	RBH03	None Supplied	3.50-3.60	Brown sandy clay
784530	RBH03	None Supplied	4.20-4.30	Brown clay and sand with gravel
784531	RBH04	None Supplied	1.7	Brown loam and sand with gravel and vegetation
784532	RBH04	None Supplied	4.1	Brown clay and sand
784533	RBH05	None Supplied	0.80-1.20	Brown sand
784534	RBH05	None Supplied	3.50-3.90	Brown sandy clay with gravel
784535	RBH06	None Supplied	4.00-4.70	Brown clay and sand with gravel
784536	RBH06	None Supplied	4.80-4.90	Brown clay and sand
784537	RBH06	None Supplied	5.10-5.20	Brown clay and sand with gravel
784538	WS01	None Supplied	3.00-3.20	Brown sandy loam with gravel
784539	WS01	None Supplied	4	Brown sand
784540	WS02	None Supplied	2.90-3.00	Brown sand

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Project / Site name: LFC Academy

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters Heating/Cooling (PrW) DI Process Water (DI PrW)

Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Moisture Content (Wet Weight)	Moisture content (% wet weight), determined gravimetrically (up to 30°C)	In-house-procedure based on BS EN 12880:2000	L019B	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight	In-house method based on British Standard Methods and MCERTS requirements.	L019B	D	NONE
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES	In-house method based on TRL 447	L038B	D	NONE
Sulphate, water soluble, in soil (16hr extraction)	Sulphate, water soluble, in soil (16hr extraction)	In-house method	L038B	D	MCERTS
Water Soluble Nitrate (leachate equivalent)	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078-PL	W	NONE
Nitrate, water soluble, in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry	In-house method based on Examination of Water and Wastewater & Polish Standard Method PN-82/C-04579.08, 2:1 extraction	L078-PL	W	NONE
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser	In-house method	L082B	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement	In-house method	L099-PL	D	MCERTS
Soil Descriptions	Textural classification	In-house method	L019B	W	NONE

For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).

For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).

For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30°C.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Quality control parameter failure associated with individual result applies to calculated sum of individuals.

The result for sum should be interpreted with caution

Analytical Report Number : 25-067971

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Key: a - No sampling date b - Incorrect container/Insufficient material provided c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
RBH01	N/A	S	784525	a	Chloride, water soluble, in soil	L082B	a
RBH01	N/A	S	784525	a	Magnesium, water soluble, in soil	L038B	a
RBH01	N/A	S	784525	a	Moisture Content (Wet Weight)	L019B	a
RBH01	N/A	S	784525	a	Nitrate, water soluble, in soil	L078-PL	a
RBH01	N/A	S	784525	a	Sample Preparation	L019B	a
RBH01	N/A	S	784525	a	Soil Descriptions	L019B	a
RBH01	N/A	S	784525	a	Stones content of soil	L019B	a
RBH01	N/A	S	784525	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
RBH01	N/A	S	784525	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
RBH01	N/A	S	784525	a	pH in soil (automated)	L099-PL	a
RBH01	N/A	S	784526	a	Chloride, water soluble, in soil	L082B	a
RBH01	N/A	S	784526	a	Magnesium, water soluble, in soil	L038B	a
RBH01	N/A	S	784526	a	Moisture Content (Wet Weight)	L019B	a
RBH01	N/A	S	784526	a	Nitrate, water soluble, in soil	L078-PL	a
RBH01	N/A	S	784526	a	Sample Preparation	L019B	a
RBH01	N/A	S	784526	a	Soil Descriptions	L019B	a
RBH01	N/A	S	784526	a	Stones content of soil	L019B	a
RBH01	N/A	S	784526	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
RBH01	N/A	S	784526	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
RBH01	N/A	S	784526	a	pH in soil (automated)	L099-PL	a
RBH02	N/A	S	784527	a	Chloride, water soluble, in soil	L082B	a
RBH02	N/A	S	784527	a	Magnesium, water soluble, in soil	L038B	a
RBH02	N/A	S	784527	a	Moisture Content (Wet Weight)	L019B	a
RBH02	N/A	S	784527	a	Nitrate, water soluble, in soil	L078-PL	a
RBH02	N/A	S	784527	a	Sample Preparation	L019B	a
RBH02	N/A	S	784527	a	Soil Descriptions	L019B	a
RBH02	N/A	S	784527	a	Stones content of soil	L019B	a
RBH02	N/A	S	784527	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
RBH02	N/A	S	784527	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
RBH02	N/A	S	784527	a	pH in soil (automated)	L099-PL	a
RBH03	N/A	S	784528	a	Chloride, water soluble, in soil	L082B	a
RBH03	N/A	S	784528	a	Magnesium, water soluble, in soil	L038B	a
RBH03	N/A	S	784528	a	Moisture Content (Wet Weight)	L019B	a
RBH03	N/A	S	784528	a	Nitrate, water soluble, in soil	L078-PL	a
RBH03	N/A	S	784528	a	Sample Preparation	L019B	a
RBH03	N/A	S	784528	a	Soil Descriptions	L019B	a
RBH03	N/A	S	784528	a	Stones content of soil	L019B	a
RBH03	N/A	S	784528	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
RBH03	N/A	S	784528	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
RBH03	N/A	S	784528	a	pH in soil (automated)	L099-PL	a
RBH03	N/A	S	784529	a	Chloride, water soluble, in soil	L082B	a
RBH03	N/A	S	784529	a	Magnesium, water soluble, in soil	L038B	a
RBH03	N/A	S	784529	a	Moisture Content (Wet Weight)	L019B	a
RBH03	N/A	S	784529	a	Nitrate, water soluble, in soil	L078-PL	a
RBH03	N/A	S	784529	a	Sample Preparation	L019B	a
RBH03	N/A	S	784529	a	Soil Descriptions	L019B	a
RBH03	N/A	S	784529	a	Stones content of soil	L019B	a
RBH03	N/A	S	784529	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
RBH03	N/A	S	784529	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
RBH03	N/A	S	784529	a	pH in soil (automated)	L099-PL	a
RBH03	N/A	S	784530	a	Chloride, water soluble, in soil	L082B	a
RBH03	N/A	S	784530	a	Magnesium, water soluble, in soil	L038B	a
RBH03	N/A	S	784530	a	Moisture Content (Wet Weight)	L019B	a
RBH03	N/A	S	784530	a	Nitrate, water soluble, in soil	L078-PL	a
RBH03	N/A	S	784530	a	Sample Preparation	L019B	a
RBH03	N/A	S	784530	a	Soil Descriptions	L019B	a

Analytical Report Number : 25-067971

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Key: a - No sampling date b - Incorrect container/Insufficient material provided c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
RBH03	N/A	S	784530	a	Stones content of soil	L019B	a
RBH03	N/A	S	784530	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
RBH03	N/A	S	784530	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
RBH03	N/A	S	784530	a	pH in soil (automated)	L099-PL	a
RBH04	N/A	S	784531	a	Chloride, water soluble, in soil	L082B	a
RBH04	N/A	S	784531	a	Magnesium, water soluble, in soil	L038B	a
RBH04	N/A	S	784531	a	Moisture Content (Wet Weight)	L019B	a
RBH04	N/A	S	784531	a	Nitrate, water soluble, in soil	L078-PL	a
RBH04	N/A	S	784531	a	Sample Preparation	L019B	a
RBH04	N/A	S	784531	a	Soil Descriptions	L019B	a
RBH04	N/A	S	784531	a	Stones content of soil	L019B	a
RBH04	N/A	S	784531	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
RBH04	N/A	S	784531	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
RBH04	N/A	S	784531	a	pH in soil (automated)	L099-PL	a
RBH04	N/A	S	784532	a	Chloride, water soluble, in soil	L082B	a
RBH04	N/A	S	784532	a	Magnesium, water soluble, in soil	L038B	a
RBH04	N/A	S	784532	a	Moisture Content (Wet Weight)	L019B	a
RBH04	N/A	S	784532	a	Nitrate, water soluble, in soil	L078-PL	a
RBH04	N/A	S	784532	a	Sample Preparation	L019B	a
RBH04	N/A	S	784532	a	Soil Descriptions	L019B	a
RBH04	N/A	S	784532	a	Stones content of soil	L019B	a
RBH04	N/A	S	784532	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
RBH04	N/A	S	784532	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
RBH04	N/A	S	784532	a	pH in soil (automated)	L099-PL	a
RBH05	N/A	S	784533	a	Chloride, water soluble, in soil	L082B	a
RBH05	N/A	S	784533	a	Magnesium, water soluble, in soil	L038B	a
RBH05	N/A	S	784533	a	Moisture Content (Wet Weight)	L019B	a
RBH05	N/A	S	784533	a	Nitrate, water soluble, in soil	L078-PL	a
RBH05	N/A	S	784533	a	Sample Preparation	L019B	a
RBH05	N/A	S	784533	a	Soil Descriptions	L019B	a
RBH05	N/A	S	784533	a	Stones content of soil	L019B	a
RBH05	N/A	S	784533	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
RBH05	N/A	S	784533	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
RBH05	N/A	S	784533	a	pH in soil (automated)	L099-PL	a
RBH05	N/A	S	784534	a	Chloride, water soluble, in soil	L082B	a
RBH05	N/A	S	784534	a	Magnesium, water soluble, in soil	L038B	a
RBH05	N/A	S	784534	a	Moisture Content (Wet Weight)	L019B	a
RBH05	N/A	S	784534	a	Nitrate, water soluble, in soil	L078-PL	a
RBH05	N/A	S	784534	a	Sample Preparation	L019B	a
RBH05	N/A	S	784534	a	Soil Descriptions	L019B	a
RBH05	N/A	S	784534	a	Stones content of soil	L019B	a
RBH05	N/A	S	784534	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
RBH05	N/A	S	784534	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
RBH05	N/A	S	784534	a	pH in soil (automated)	L099-PL	a
RBH06	N/A	S	784535	a	Chloride, water soluble, in soil	L082B	a
RBH06	N/A	S	784535	a	Magnesium, water soluble, in soil	L038B	a
RBH06	N/A	S	784535	a	Moisture Content (Wet Weight)	L019B	a
RBH06	N/A	S	784535	a	Nitrate, water soluble, in soil	L078-PL	a
RBH06	N/A	S	784535	a	Sample Preparation	L019B	a
RBH06	N/A	S	784535	a	Soil Descriptions	L019B	a
RBH06	N/A	S	784535	a	Stones content of soil	L019B	a
RBH06	N/A	S	784535	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
RBH06	N/A	S	784535	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
RBH06	N/A	S	784535	a	pH in soil (automated)	L099-PL	a
RBH06	N/A	S	784536	a	Chloride, water soluble, in soil	L082B	a

Analytical Report Number : 25-067971

Project / Site name: LFC Academy

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Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
RBH06	N/A	S	784536	a	Magnesium, water soluble, in soil	L038B	a
RBH06	N/A	S	784536	a	Moisture Content (Wet Weight)	L019B	a
RBH06	N/A	S	784536	a	Nitrate, water soluble, in soil	L078-PL	a
RBH06	N/A	S	784536	a	Sample Preparation	L019B	a
RBH06	N/A	S	784536	a	Soil Descriptions	L019B	a
RBH06	N/A	S	784536	a	Stones content of soil	L019B	a
RBH06	N/A	S	784536	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
RBH06	N/A	S	784536	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
RBH06	N/A	S	784536	a	pH in soil (automated)	L099-PL	a
RBH06	N/A	S	784537	a	Chloride, water soluble, in soil	L082B	a
RBH06	N/A	S	784537	a	Magnesium, water soluble, in soil	L038B	a
RBH06	N/A	S	784537	a	Moisture Content (Wet Weight)	L019B	a
RBH06	N/A	S	784537	a	Nitrate, water soluble, in soil	L078-PL	a
RBH06	N/A	S	784537	a	Sample Preparation	L019B	a
RBH06	N/A	S	784537	a	Soil Descriptions	L019B	a
RBH06	N/A	S	784537	a	Stones content of soil	L019B	a
RBH06	N/A	S	784537	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
RBH06	N/A	S	784537	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
RBH06	N/A	S	784537	a	pH in soil (automated)	L099-PL	a
WS01	N/A	S	784538	a	Chloride, water soluble, in soil	L082B	a
WS01	N/A	S	784538	a	Magnesium, water soluble, in soil	L038B	a
WS01	N/A	S	784538	a	Moisture Content (Wet Weight)	L019B	a
WS01	N/A	S	784538	a	Nitrate, water soluble, in soil	L078-PL	a
WS01	N/A	S	784538	a	Sample Preparation	L019B	a
WS01	N/A	S	784538	a	Soil Descriptions	L019B	a
WS01	N/A	S	784538	a	Stones content of soil	L019B	a
WS01	N/A	S	784538	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
WS01	N/A	S	784538	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
WS01	N/A	S	784538	a	pH in soil (automated)	L099-PL	a
WS01	N/A	S	784539	a	Chloride, water soluble, in soil	L082B	a
WS01	N/A	S	784539	a	Magnesium, water soluble, in soil	L038B	a
WS01	N/A	S	784539	a	Moisture Content (Wet Weight)	L019B	a
WS01	N/A	S	784539	a	Nitrate, water soluble, in soil	L078-PL	a
WS01	N/A	S	784539	a	Sample Preparation	L019B	a
WS01	N/A	S	784539	a	Soil Descriptions	L019B	a
WS01	N/A	S	784539	a	Stones content of soil	L019B	a
WS01	N/A	S	784539	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
WS01	N/A	S	784539	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
WS01	N/A	S	784539	a	pH in soil (automated)	L099-PL	a
WS02	N/A	S	784540	a	Chloride, water soluble, in soil	L082B	a
WS02	N/A	S	784540	a	Magnesium, water soluble, in soil	L038B	a
WS02	N/A	S	784540	a	Moisture Content (Wet Weight)	L019B	a
WS02	N/A	S	784540	a	Nitrate, water soluble, in soil	L078-PL	a
WS02	N/A	S	784540	a	Sample Preparation	L019B	a
WS02	N/A	S	784540	a	Soil Descriptions	L019B	a
WS02	N/A	S	784540	a	Stones content of soil	L019B	a
WS02	N/A	S	784540	a	Sulphate, water soluble, in soil (16hr extraction)	L038B	a
WS02	N/A	S	784540	a	Water Soluble Nitrate (leachate equivalent)	L078-PL	a
WS02	N/A	S	784540	a	pH in soil (automated)	L099-PL	a



TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with: BS EN ISO 17892-12:2018+A2:2022,
cl 5.3 and 5.5, Fall Cone Method, 4 Pt Test, BS 1377-2:2022, cl 5.2 and 6



4041

Client: Curtins
Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester
Contact: Jonathan Provis
Site Address: LFC Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 23/12/2025
Sampled By: Client - JP

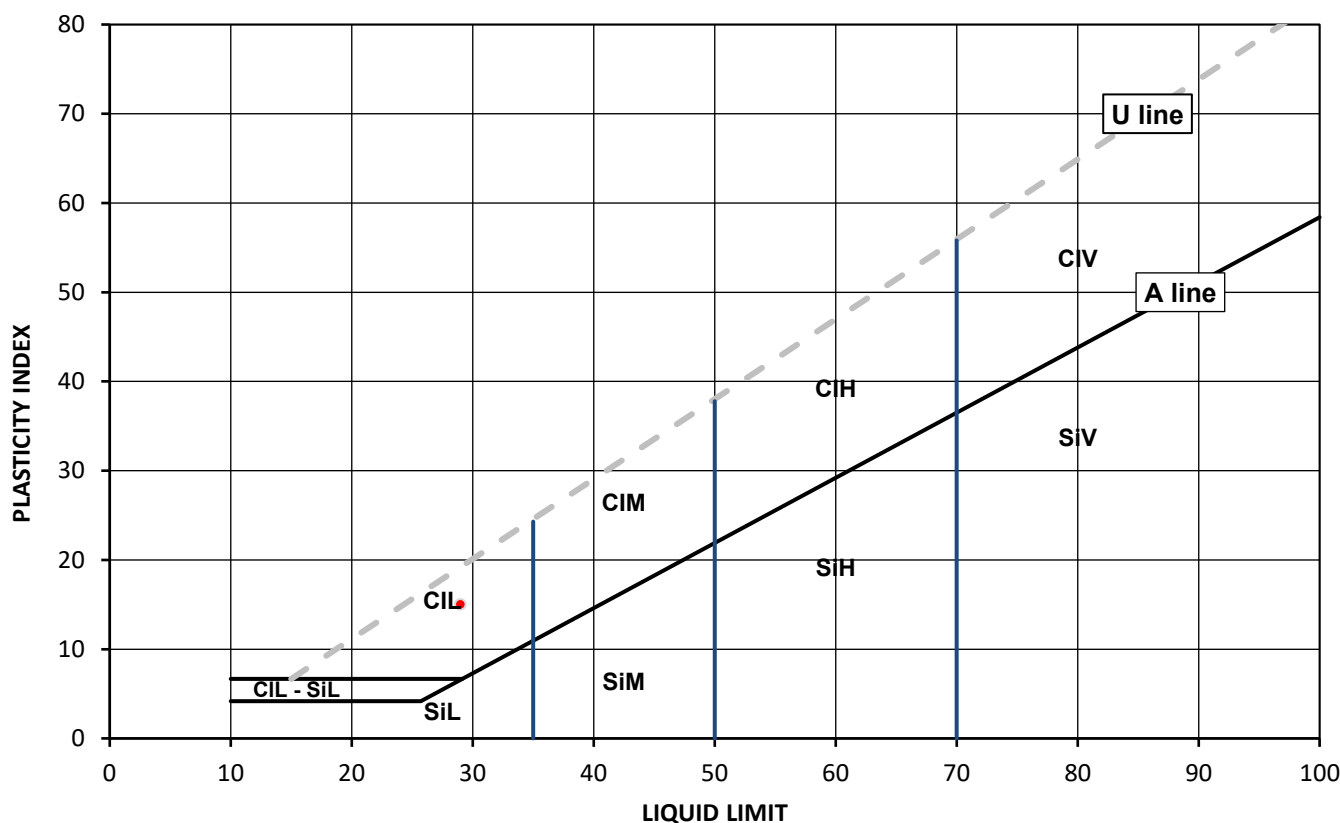
Test Results:

Laboratory Reference: 784442
Hole No.: RBH01
Sample Reference: Not Given
Sample Description: Grey slightly gravelly very sandy CLAY

Depth Top [m]: 1.90
Depth Base [m]: 2.00
Sample Type: D

Sample Preparation: Tested after >0.425mm removed by hand; The water content in the sample was increased
Cone Type: 80g/30deg

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity Index [IL] % #	Consistency Index [IC] % #	% Passing 425µm BS Test Sieve
17.1	29	14	15	0.20	0.80	92



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L Low	50 to 70
	M Medium	exceeding 70
	H High	append to classification for organic material (eg ClHO)
	V Very high	
	O Organic	

Note: Water Content by BS EN ISO 17892-1:2014+A1:2022, BS 1377-2:2022; # Non accredited

Remarks:

Signed:

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

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 cl 5.3 and 5.5, Fall Cone Method, 4 Pt Test, BS 1377-2:2022, cl 5.2 and 6

4041

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 Manchester
 Contact: Jonathan Provis
 Site Address: LFC Academy
 Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
 Job Number: 25-067968-2
 Date Sampled: Not Given
 Date Received: 21/11/2025
 Date Tested: 23/12/2025
 Sampled By: Client - JP

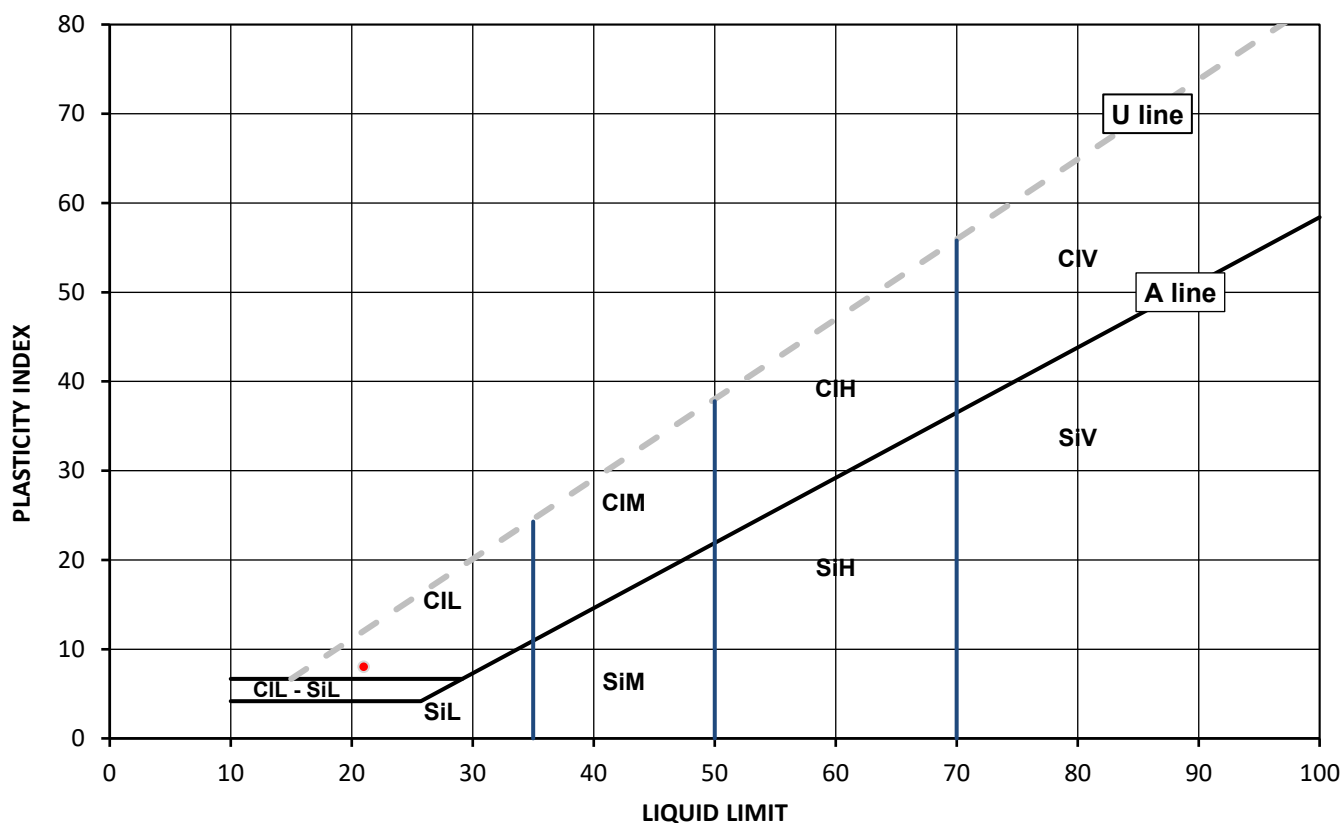
Test Results:

Laboratory Reference: 784457
 Hole No.: RBH02
 Sample Reference: Not Given
 Sample Description: Brown slightly gravelly clayey SAND

Depth Top [m]: 2.60
 Depth Base [m]: 2.70
 Sample Type: D

Sample Preparation: Tested after washing to remove >0.425mm; The water content in the sample was increased
 Cone Type: 80g/30deg

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity Index [IL] % #	Consistency Index [IC] % #	% Passing 425µm BS Test Sieve
13.1	21	13	8	0.00	1.00	93



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg ClHO)

Note: Water Content by BS EN ISO 17892-1:2014+A1:2022, BS 1377-2:2022; # Non accredited

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cl 5.3 and 5.5, Fall Cone Method, 4 Pt Test, BS 1377-2:2022, cl 5.2 and 6



4041

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Manchester
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Site Address: LFC Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 23/12/2025
Sampled By: Client - JP

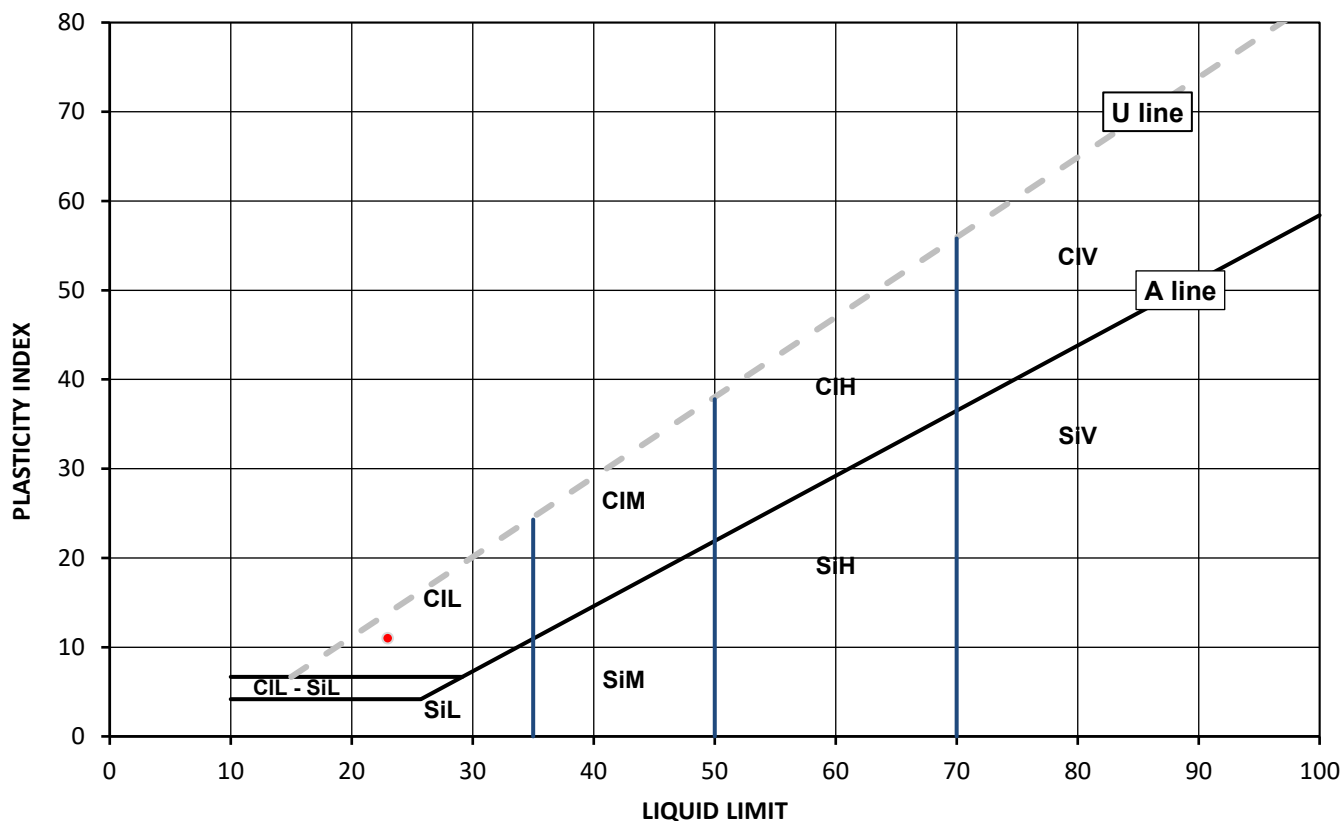
Test Results:

Laboratory Reference: 784472
Hole No.: RBH03
Sample Reference: Not Given
Sample Description: Brownish grey slightly gravelly very sandy CLAY

Depth Top [m]: 3.00
Depth Base [m]: 3.10
Sample Type: D

Sample Preparation: Tested after washing to remove >0.425mm; The water content in the sample was increased
Cone Type: 80g/30deg

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity Index [IL] % #	Consistency Index [IC] % #	% Passing 425µm BS Test Sieve
16.5	23	12	11	0.45	0.55	90



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	L Low below 35
Si	Silt	M Medium 35 to 50
		H High 50 to 70
		V Very high exceeding 70
	O Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS EN ISO 17892-1:2014+A1:2022, BS 1377-2:2022; # Non accredited

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 cl 5.3 and 5.5, Fall Cone Method, 4 Pt Test, BS 1377-2:2022, cl 5.2 and 6

4041

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 Manchester
 Contact: Jonathan Provis
 Site Address: LFC Academy
 Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
 Job Number: 25-067968-2
 Date Sampled: Not Given
 Date Received: 21/11/2025
 Date Tested: 23/12/2025
 Sampled By: Client - JP

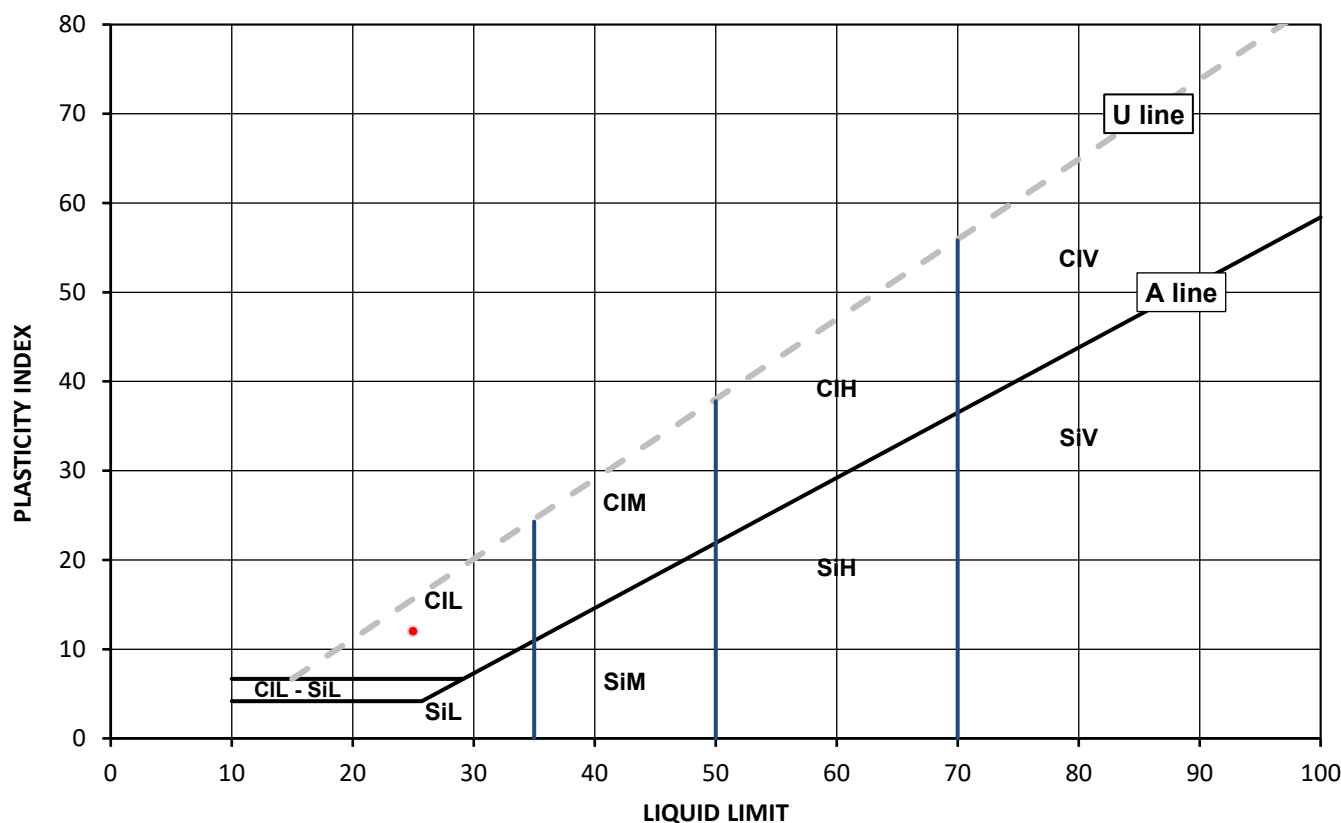
Test Results:

Laboratory Reference: 784473
 Hole No.: RBH03
 Sample Reference: Not Given
 Sample Description: Brown slightly gravelly very sandy CLAY

Depth Top [m]: 3.50
 Depth Base [m]: 3.60
 Sample Type: D

Sample Preparation: Tested after >0.425mm removed by hand; The water content in the sample was increased
 Cone Type: 80g/30deg

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity Index [IL] % #	Consistency Index [IC] % #	% Passing 425µm BS Test Sieve
16.9	25	13	12	0.33	0.67	95



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg ClHO)

Note: Water Content by BS EN ISO 17892-1:2014+A1:2022, BS 1377-2:2022; # Non accredited

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 cl 5.3 and 5.5, Fall Cone Method, 4 Pt Test, BS 1377-2:2022, cl 5.2 and 6

4041

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 Client Address: Merchant Exchange, 17-19 Whitworth Street West,
 Manchester
 Contact: Jonathan Provis
 Site Address: LFC Academy
 Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
 Job Number: 25-067968-2
 Date Sampled: Not Given
 Date Received: 21/11/2025
 Date Tested: 23/12/2025
 Sampled By: Client - JP

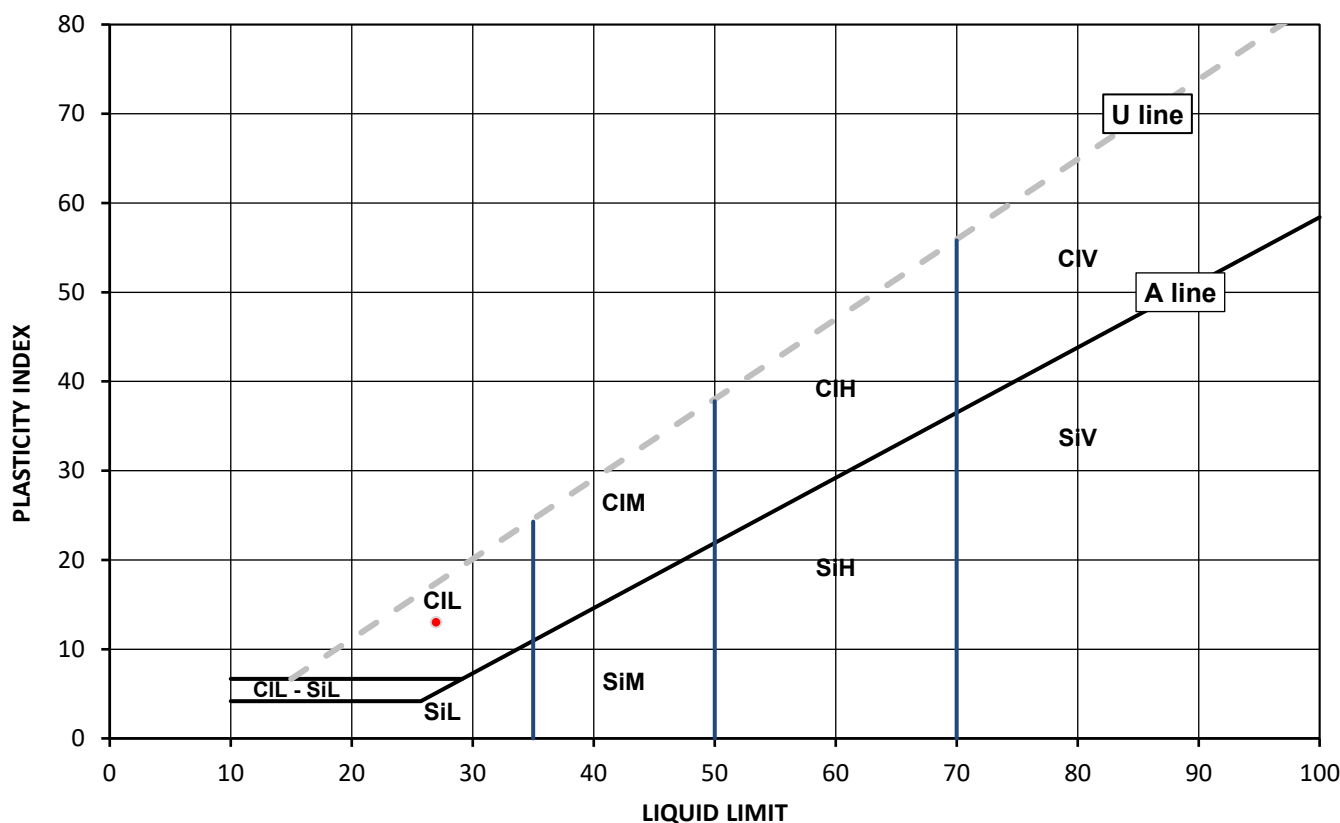
Test Results:

Laboratory Reference: 784487
 Hole No.: RBH04
 Sample Reference: Not Given
 Sample Description: Brown slightly gravelly very sandy CLAY

Depth Top [m]: 2.15
 Depth Base [m]: Not Given
 Sample Type: D

Sample Preparation: Tested after >0.425mm removed by hand; The water content in the sample was increased
 Cone Type: 80g/30deg

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity Index [IL] % #	Consistency Index [IC] % #	% Passing 425µm BS Test Sieve
18.8	27	14	13	0.38	0.62	96



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	below 35
Si	Silt	35 to 50
	L	Low
	M	Medium
	H	High
	V	Very high
	O	Organic
		append to classification for organic material (eg ClHO)

Note: Water Content by BS EN ISO 17892-1:2014+A1:2022, BS 1377-2:2022; # Non accredited

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TEST CERTIFICATE

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cl 5.3 and 5.5, Fall Cone Method, 4 Pt Test, BS 1377-2:2022, cl 5.2 and 6



4041

Client: Curtins
Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester
Contact: Jonathan Provis
Site Address: LFC Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 23/12/2025
Sampled By: Client - JP

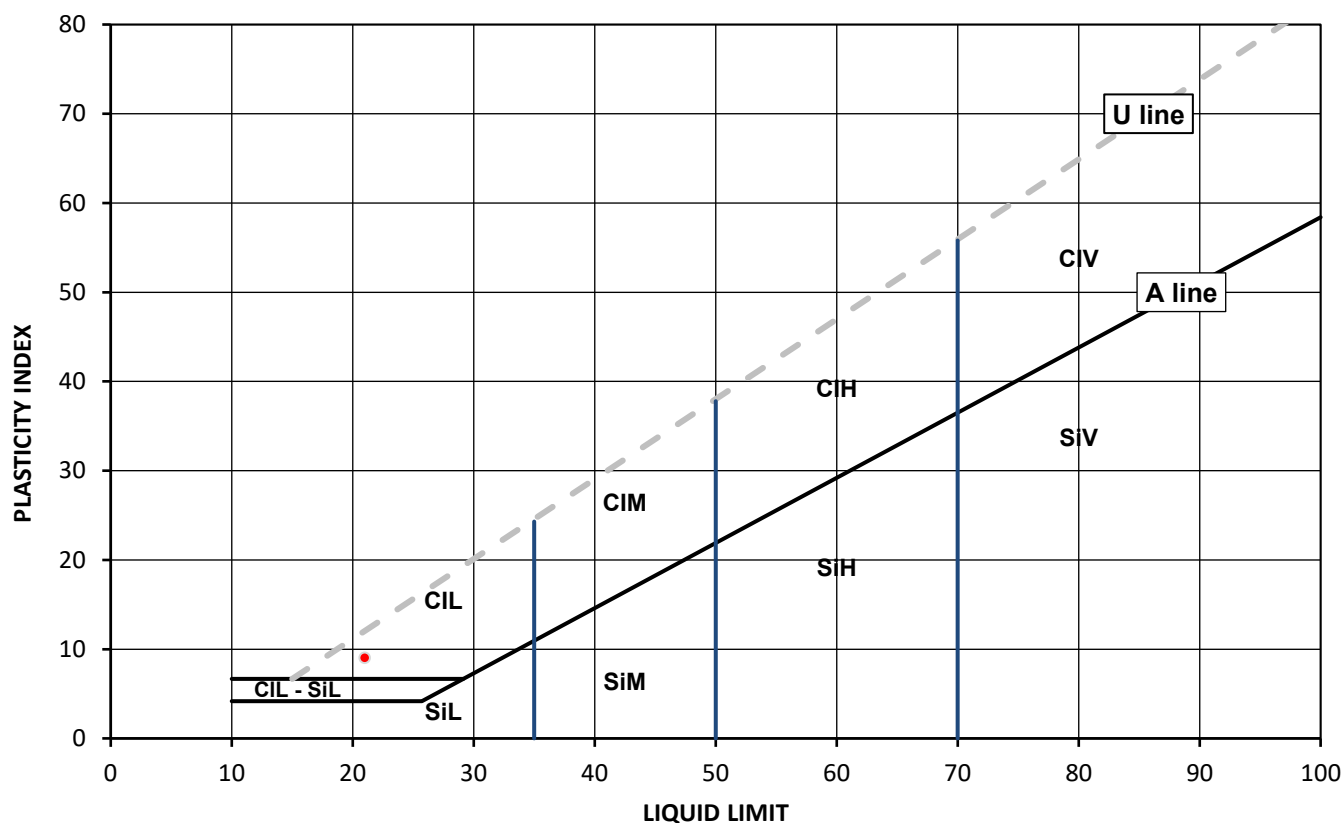
Test Results:

Laboratory Reference: 784489
Hole No.: RBH05
Sample Reference: Not Given
Sample Description: Brown slightly gravelly clayey SAND

Depth Top [m]: 2.20
Depth Base [m]: 2.30
Sample Type: D

Sample Preparation: Tested after washing to remove >0.425mm; The water content in the sample was increased
Cone Type: 80g/30deg

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity Index [IL] % #	Consistency Index [IC] % #	% Passing 425µm BS Test Sieve
12.3	21	12	9	0.00	1.00	91



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	L Low below 35
Si	Silt	M Medium 35 to 50
		H High 50 to 70
		V Very high exceeding 70
	O Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS EN ISO 17892-1:2014+A1:2022, BS 1377-2:2022; # Non accredited

Remarks:

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TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

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cl 5.3 and 5.5, Fall Cone Method, 4 Pt Test, BS 1377-2:2022, cl 5.2 and 6



4041

Client: Curtins
Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester
Contact: Jonathan Provis
Site Address: LFC Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 07/01/2026
Sampled By: Client - JP

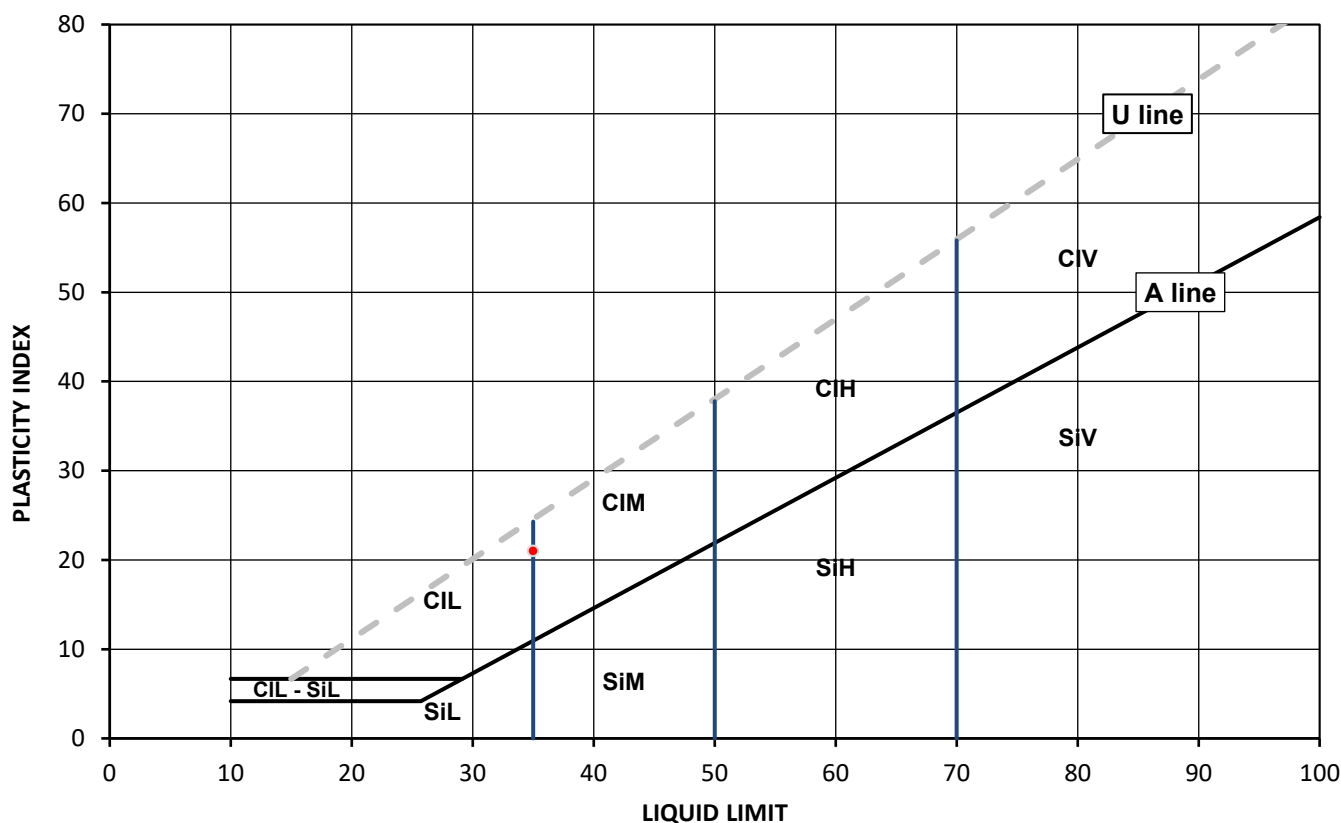
Test Results:

Laboratory Reference: 784491
Hole No.: RBH06
Sample Reference: Not Given
Sample Description: Brownish grey slightly gravelly sandy CLAY

Depth Top [m]: 4.00
Depth Base [m]: 4.70
Sample Type: B

Sample Preparation: Tested after >0.425mm removed by hand; The water content in the sample was increased
Cone Type: 80g/30deg

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity Index [IL] % #	Consistency Index [IC] % #	% Passing 425µm BS Test Sieve
17.5	35	14	21	0.19	0.81	88



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl	Clay	L Low below 35
Si	Silt	M Medium 35 to 50
		H High 50 to 70
		V Very high exceeding 70
	O Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS EN ISO 17892-1:2014+A1:2022, BS 1377-2:2022; # Non accredited

Remarks:

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cl 5.3 and 5.5, Fall Cone Method, 4 Pt Test, BS 1377-2:2022, cl 5.2 and 6



4041

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Manchester
Contact: Jonathan Provis
Site Address: LFC Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 23/12/2025
Sampled By: Client - JP

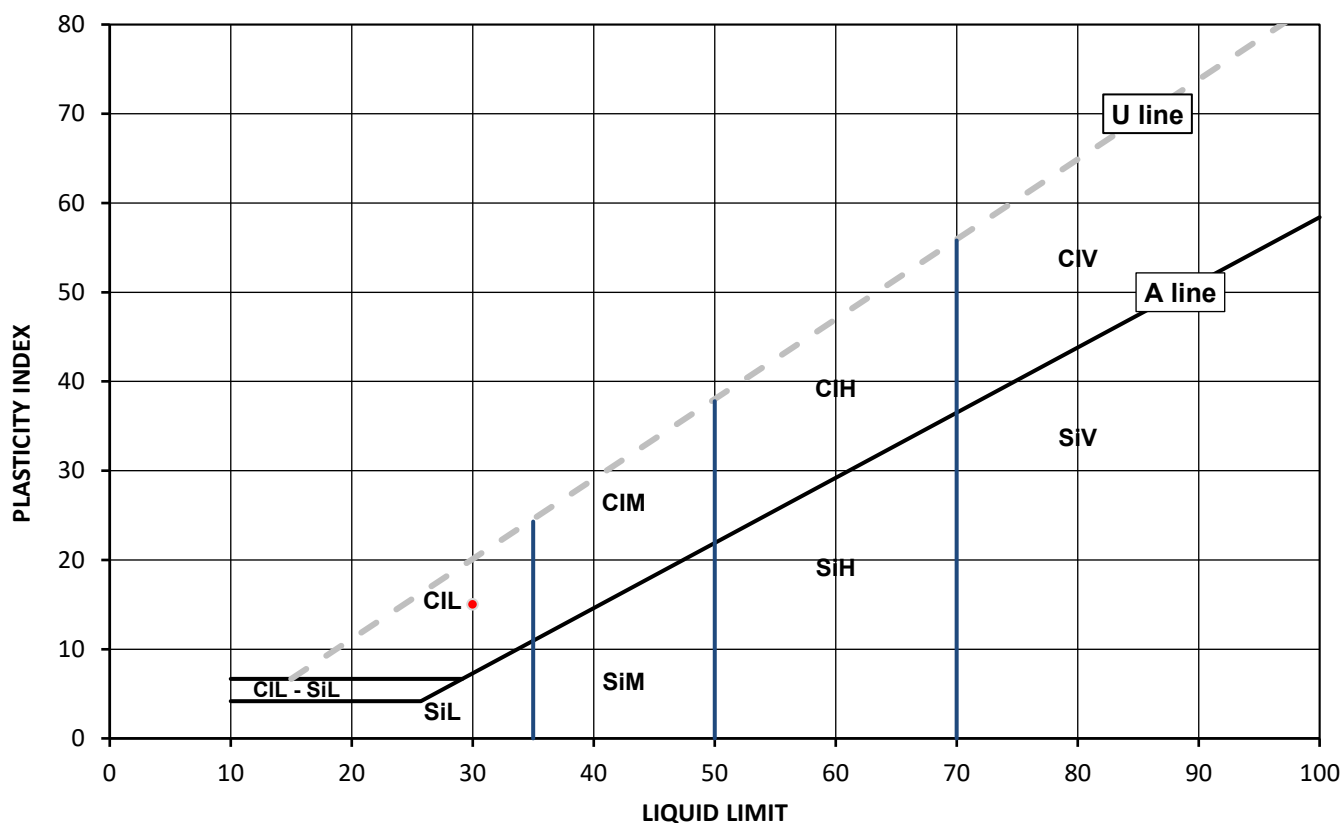
Test Results:

Laboratory Reference: 784505
Hole No.: WS03
Sample Reference: Not Given
Sample Description: Brown slightly gravelly very sandy CLAY

Depth Top [m]: 1.20
Depth Base [m]: Not Given
Sample Type: D

Sample Preparation: Tested after washing to remove >0.425mm; The water content in the sample was increased
Cone Type: 80g/30deg

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	Liquidity Index [IL] % #	Consistency Index [IC] % #	% Passing 425µm BS Test Sieve
18.5	30	15	15	0.27	0.73	89



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

	Plasticity	Liquid Limit
Cl Clay	L Low	below 35
Si Silt	M Medium	35 to 50
	H High	50 to 70
	V Very high	exceeding 70
	O Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS EN ISO 17892-1:2014+A1:2022, BS 1377-2:2022; # Non accredited

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SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:



4041

Client: Curtins
Client Address: Merchant Exchange, 17-19 Whitworth Street
West,
Manchester
Contact: Jonathan Provis
Site Address: LFC Academy

BS EN ISO 17892-12:2018+A2:2022 cl 5.3 and 5.5, Fall Cone Method, 4 Pt
Test, BS 1377-2:2022, cl 5.2 and 6. W by BS EN ISO 17892-1:2014+A1:2022.

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 23/12/2025 - 07/01/2026
Sampled By: Client - JP

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	W	Liquid & Plastic Limit							Density		
		Reference	Depth Top	Depth Base	Type				% Passing 425um	WL*	Correlation Factor	Wp	Ip	Cone type	Sample Preparation	bulk	dry	PD
			m	m					%	%		%	%			Mg/m3	Mg/m3	Mg/m3
784442	RBH01	Not Given	1.90	2.00	D	Grey slightly gravelly very sandy CLAY	Atterberg 4 Point	17.1	92	29	-	14	15	80g/30 deg	R / I			
784457	RBH02	Not Given	2.60	2.70	D	Brown slightly gravelly clayey SAND	Atterberg 4 Point	13.1	93	21	-	13	8	80g/30 deg	WR / I			
784472	RBH03	Not Given	3.00	3.10	D	Brownish grey slightly gravelly very sandy CLAY	Atterberg 4 Point	16.5	90	23	-	12	11	80g/30 deg	WR / I			
784473	RBH03	Not Given	3.50	3.60	D	Brown slightly gravelly very sandy CLAY	Atterberg 4 Point	16.9	95	25	-	13	12	80g/30 deg	R / I			
784487	RBH04	Not Given	2.15	Not Given	D	Brown slightly gravelly very sandy CLAY	Atterberg 4 Point	18.8	96	27	-	14	13	80g/30 deg	R / I			
784489	RBH05	Not Given	2.20	2.30	D	Brown slightly gravelly clayey SAND	Atterberg 4 Point	12.3	91	21	-	12	9	80g/30 deg	WR / I			
784491	RBH06	Not Given	4.00	4.70	B	Brownish grey slightly gravelly sandy CLAY	Atterberg 4 Point	17.5	88	35	-	14	21	80g/30 deg	R / I			
784503	WS01	Not Given	3.00	3.20	D	Dark brown organic CLAY		53.7										
784505	WS03	Not Given	1.20	Not Given	D	Brown slightly gravelly very sandy CLAY	Atterberg 4 Point	18.5	89	30	-	15	15	80g/30 deg	WR / I			

Note: # Non accredited; NP - Non plastic; N - Tested in natural condition, R - Tested after >0,425mm removed by hand, WR - Tested after washing to remove >425mm; I - The water content in the sample was increased, D - The water content in the sample was decreased; * - One point liquid limit corrected as per the report Correlation Factor by Clayton C.R.I and Jukes A.W (1978)

Comments:

Signed:

Katarzyna Koziel

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for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS EN ISO 17892-1:2014+A1:2022, BS 1377-2: 2022, clause 4.1



Client: 4041 Curtins
Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester

Contact: Jonathan Provis
Site Address: LFC Academy

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 23/12/2025 - 07/01/2026
Sampled By: Client - JP

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC											
		Reference	Depth Top m	Depth Base m	Type														
784442	RBH01	Not Given	1.90	2.00	D	Grey slightly gravelly very sandy CLAY		17.1											
784457	RBH02	Not Given	2.60	2.70	D	Brown slightly gravelly clayey SAND		13.1											
784472	RBH03	Not Given	3.00	3.10	D	Brownish grey slightly gravelly very sandy CLAY		16.5											
784473	RBH03	Not Given	3.50	3.60	D	Brown slightly gravelly very sandy CLAY		16.9											
784487	RBH04	Not Given	2.15	Not Given	D	Brown slightly gravelly very sandy CLAY		18.8											
784489	RBH05	Not Given	2.20	2.30	D	Brown slightly gravelly clayey SAND		12.3											
784491	RBH06	Not Given	4.00	4.70	B	Brownish grey slightly gravelly sandy CLAY		17.5											
784503	WS01	Not Given	3.00	3.20	D	Dark brown organic CLAY		53.7											
784505	WS03	Not Given	1.20	Not Given	D	Brown slightly gravelly very sandy CLAY		18.5											

Comments:

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Signed:

Katarzyna Koziel

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd



TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10



4041

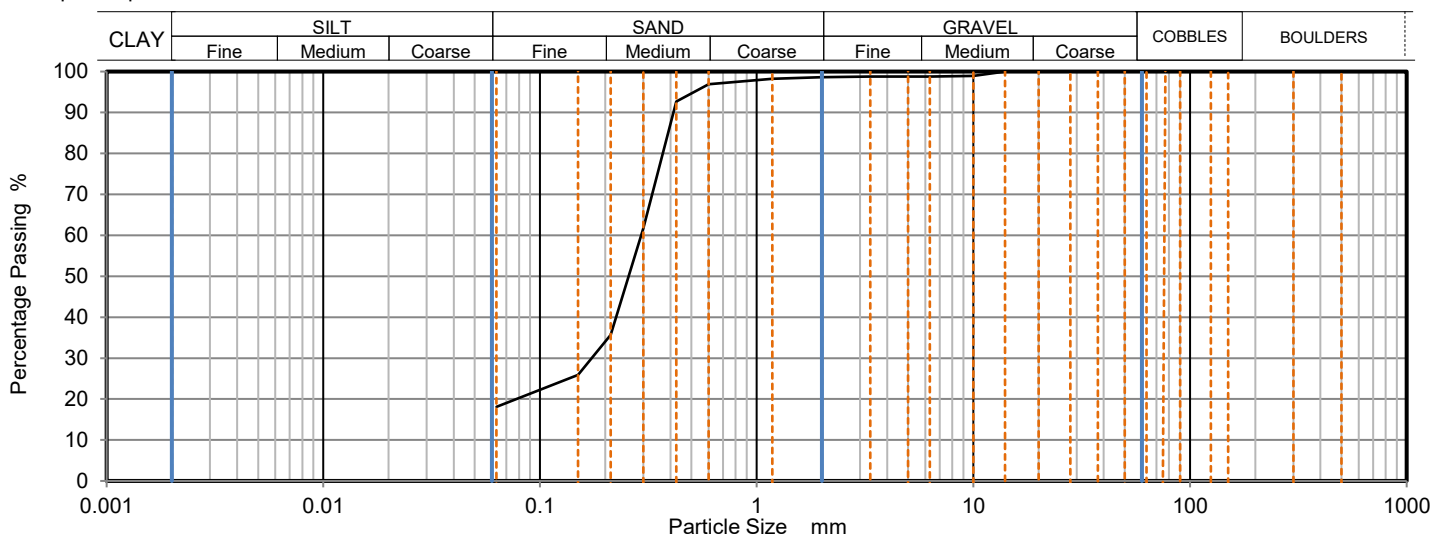
Client: Curtins
Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester
Contact: Jonathan Provis
Site Address: LFC Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 23/12/2025
Sampled By: Client - JP

Test Results:

Laboratory Reference: 784458
Hole No.: RBH02
Sample Reference: Not Given
Sample Description: Reddish brown clayey SAND
Sample Preparation: Sample was quartered, oven dried at 106.4 °C and broken down by hand.

Depth Top [m]: 2.90
Depth Base [m]: 3.40
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	99		
5	99		
3.35	99		
2	99		
1.18	98		
0.6	97		
0.425	93		
0.3	62		
0.212	36		
0.15	26		
0.063	18		

Sample Proportions	% dry mass
Very coarse	0
Gravel	1
Sand	81
Fines <0.063 mm	18

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed:

Katarzyna Koziel

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10



4041

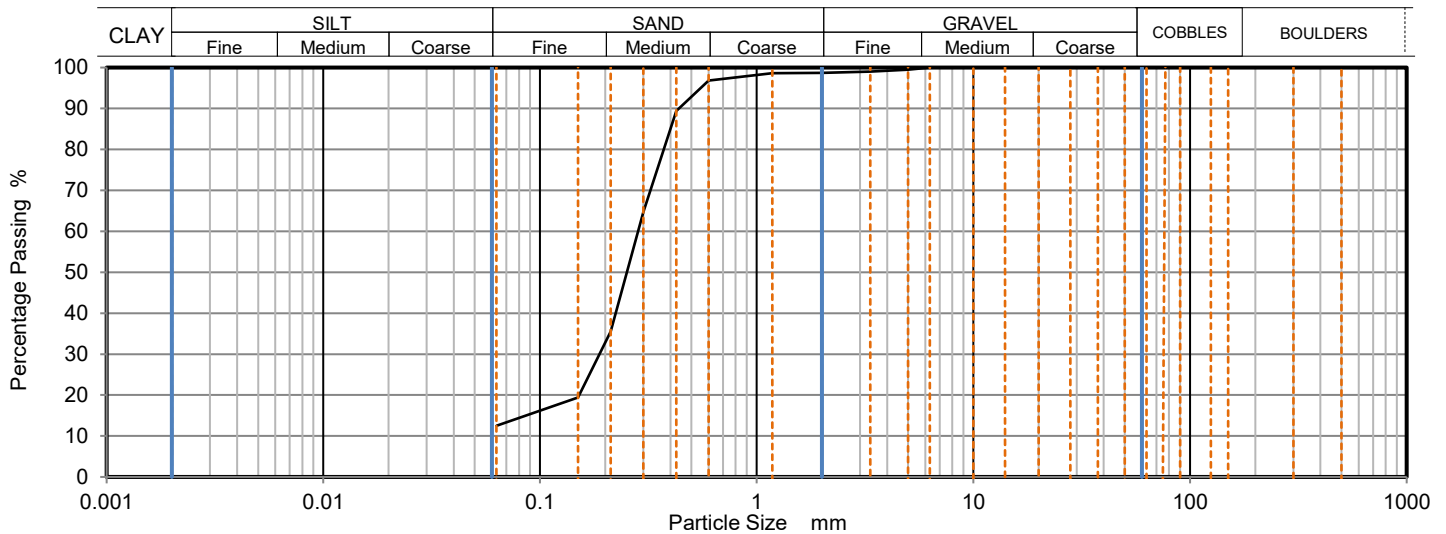
Client: Curtins
Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester
Contact: Jonathan Provis
Site Address: LFC Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 07/01/2026
Sampled By: Client - JP

Test Results:

Laboratory Reference: 784471
Hole No.: RBH03
Sample Reference: Not Given
Sample Description: Dark brown clayey SAND
Sample Preparation: Sample was quartered, oven dried at 107.1 °C and broken down by hand.

Depth Top [m]: 1.20
Depth Base [m]: 1.50
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	99		
2	99		
1.18	99		
0.6	97		
0.425	89		
0.3	65		
0.212	36		
0.15	19		
0.063	13		

Sample Proportions	% dry mass
Very coarse	0
Gravel	1
Sand	86
Fines <0.063 mm	13

Grading Analysis		
D100	mm	6.3
D60	mm	0.284
D30	mm	0.188
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed:

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10



4041

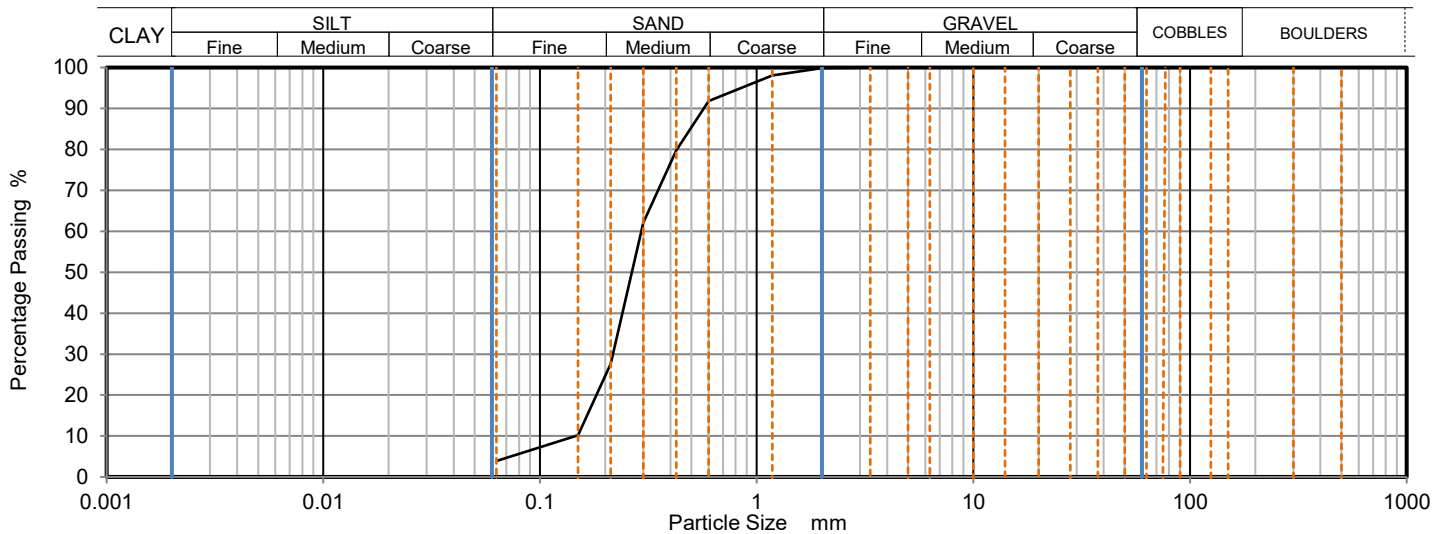
Client: Curtins
Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester
Contact: Jonathan Provis
Site Address: LFC Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 07/01/2026
Sampled By: Client - JP

Test Results:

Laboratory Reference: 784488
Hole No.: RBH05
Sample Reference: Not Given
Sample Description: Dark brown slightly clayey SAND
Sample Preparation: Sample was quartered, oven dried at 107.1 °C and broken down by hand.

Depth Top [m]: 0.80
Depth Base [m]: 1.20
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	98		
0.6	92		
0.425	80		
0.3	62		
0.212	28		
0.15	10		
0.063	4		

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	96
Fines <0.063 mm	4

Grading Analysis		
D100	mm	3.35
D60	mm	0.294
D30	mm	0.217
D10	mm	0.145
Uniformity Coefficient		2
Curvature Coefficient		1.1

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed:

Katarzyna Koziel

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Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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4041

**TEST CERTIFICATE****DETERMINATION OF PARTICLE
SIZE DISTRIBUTION**Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10

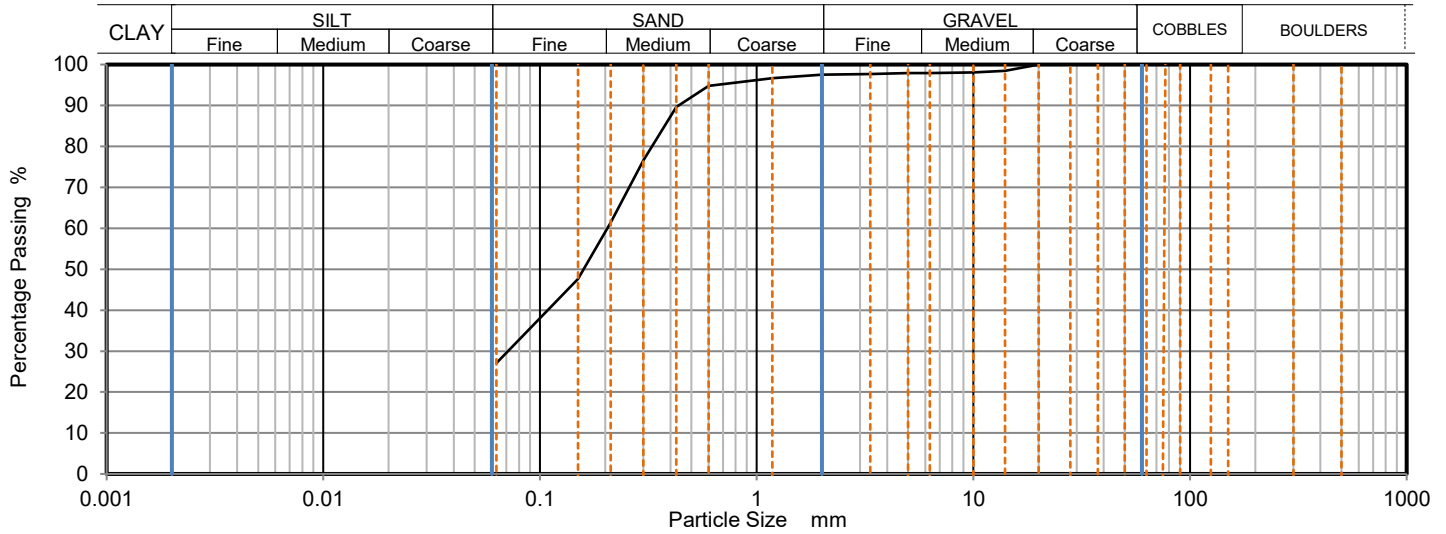
Client: Curtins
Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester
Contact: Jonathan Provis
Site Address: LFC Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 07/01/2026
Sampled By: Client - JP

Test Results:

Laboratory Reference: 784490
Hole No.: RBH05
Sample Reference: Not Given
Sample Description: Grey slightly gravelly very sandy CLAY
Sample Preparation: Sample was quartered, oven dried at 107.1 °C and broken down by hand.

Depth Top [m]: 2.60
Depth Base [m]: 3.00
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	99		
10	98		
6.3	98		
5	98		
3.35	98		
2	98		
1.18	97		
0.6	95		
0.425	90		
0.3	77		
0.212	61		
0.15	48		
0.063	27		

Sample Proportions	% dry mass
Very coarse	0
Gravel	3
Sand	70
Fines <0.063 mm	27

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:**Signed:**

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10



4041

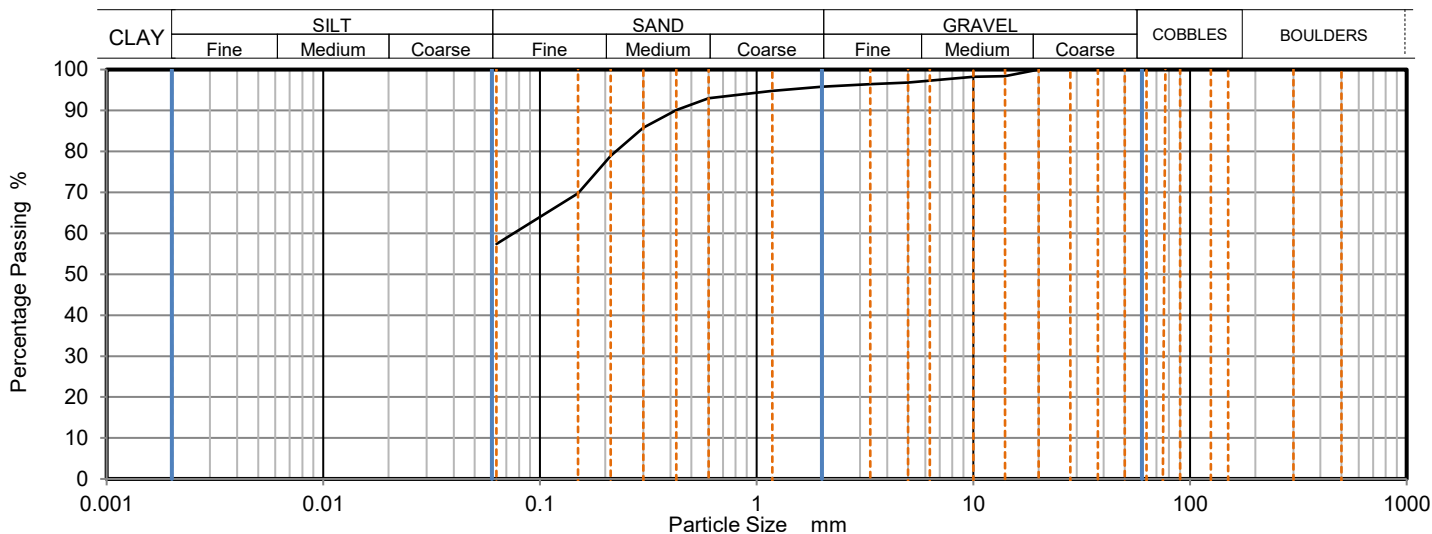
Client: Curtins
Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester
Contact: Jonathan Provis
Site Address: LFC Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 07/01/2026
Sampled By: Client - JP

Test Results:

Laboratory Reference: 784491
Hole No.: RBH06
Sample Reference: Not Given
Sample Description: Brownish grey slightly gravelly sandy CLAY
Sample Preparation: Sample was quartered, oven dried at 107.1 °C and broken down by hand.

Depth Top [m]: 4.00
Depth Base [m]: 4.70
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	98		
10	98		
6.3	97		
5	97		
3.35	96		
2	96		
1.18	95		
0.6	93		
0.425	90		
0.3	86		
0.212	79		
0.15	70		
0.063	57		

Sample Proportions	% dry mass
Very coarse	0
Gravel	4
Sand	39
Fines <0.063 mm	57

Grading Analysis	
D100	mm 20
D60	mm 0.0757
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed:

Katarzyna Koziel

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10



4041

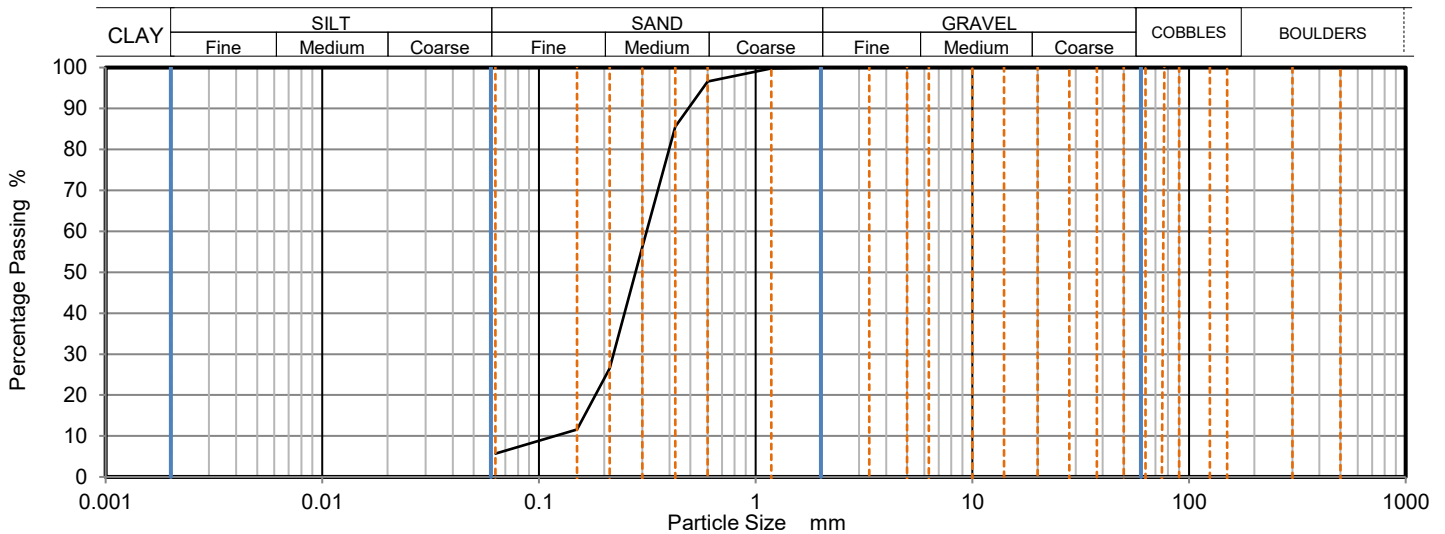
Client: Curtins
Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester
Contact: Jonathan Provis
Site Address: LFC Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 07/01/2026
Sampled By: Client - JP

Test Results:

Laboratory Reference: 784504
Hole No.: WS01
Sample Reference: Not Given
Sample Description: Brown clayey SAND
Sample Preparation: Sample was quartered, oven dried at 107.1 °C and broken down by hand.

Depth Top [m]: 3.50
Depth Base [m]: 4.00
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	97		
0.425	86		
0.3	56		
0.212	27		
0.15	12		
0.063	6		

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	94
Fines <0.063 mm	6

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed:

Katarzyna Koziel

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS EN ISO 17892-4:2016,
BS 1377-2:2022 cl. 10



4041

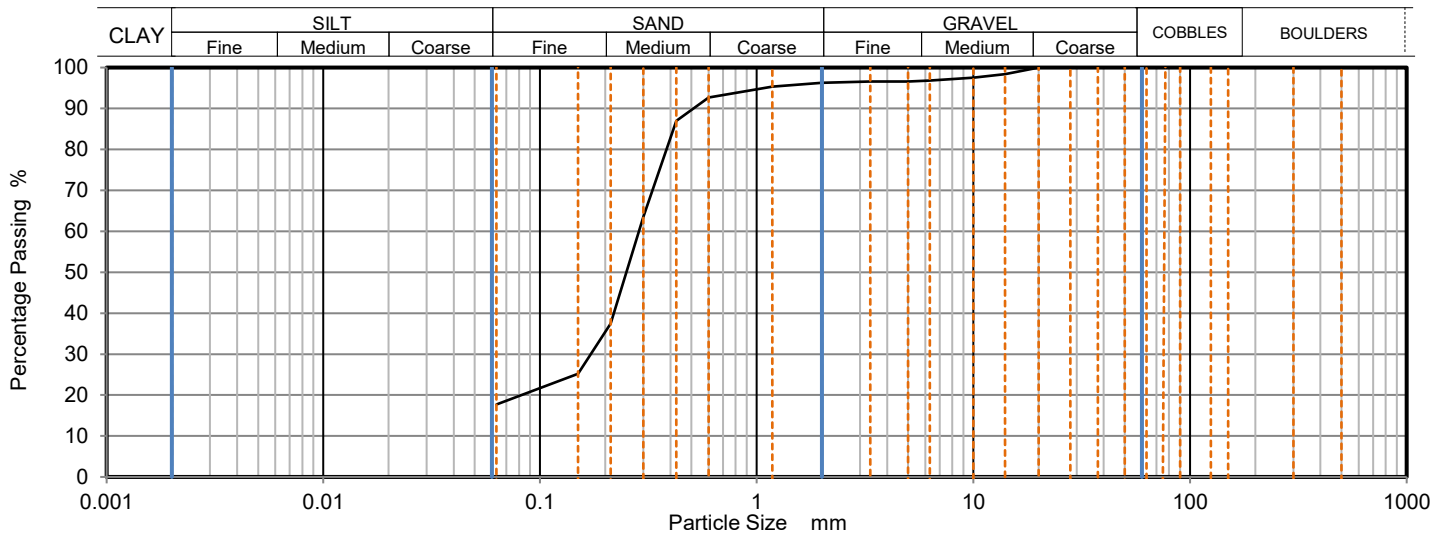
Client: Curtins
Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester
Contact: Jonathan Provis
Site Address: LFC Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 23/12/2025
Sampled By: Client - JP

Test Results:

Laboratory Reference: 784506
Hole No.: WS03
Sample Reference: Not Given
Sample Description: Reddish brown slightly gravelly clayey SAND
Sample Preparation: Sample was quartered, oven dried at 106.4 °C and broken down by hand.

Depth Top [m]: 2.00
Depth Base [m]: Not Given
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	98		
10	98		
6.3	97		
5	97		
3.35	97		
2	96		
1.18	95		
0.6	93		
0.425	87		
0.3	64		
0.212	38		
0.15	25		
0.063	18		

Sample Proportions	% dry mass
Very coarse	0
Gravel	4
Sand	78
Fines <0.063 mm	18

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with ISO 17892 -4, by sieving on as received or wet sample

Remarks:

Signed:

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

DETERMINATION OF POINT LOAD STRENGTH

Tested in Accordance with: ISRM: 2007, pages 125-132



4041

Client: Curtins

Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester

Contact: Jonathan Provis

Site Address: LFC Academy

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269

Job Number: 25-067968-2

Date Sampled: Not Given

Date Received: 21/11/2025

Date Tested: 07/01 - 16/01/2026

Sampled By: Client - JP

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P kN	Equivalent diameter, De mm	Point Load Strength Index	
		Reference	Depth Top	Depth Base	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm			Is MPa	Is(50) MPa
			m	m															
784443	RBH01	Not Given	4.34	4.48	C	Brown SANDSTONE	WC = 8.4%	1	D	U	YES	58.3	101.6	102.0	98.0	1.9	99.8	0.19	0.25
784444	RBH01	Not Given	4.79	4.90	C	Brown SANDSTONE	WC = 7.1%	1	A	U	YES	-	101.6	55.0	47.0	3.6	78.0	0.58	0.71
784445	RBH01	Not Given	5.35	5.46	C	Brown SANDSTONE	WC = 8.4%	1	D	U	YES	67.0	101.7	102.0	96.0	3.1	98.8	0.31	0.42
784446	RBH01	Not Given	5.83	6.11	C	Orangish brown SANDSTONE	WC = 7.0%	1	D	U	YES	71.4	99.6	100.0	95.0	2.7	97.3	0.29	0.39
784447	RBH01	Not Given	6.32	6.46	C	Brown SANDSTONE	WC = 12.0%	1	D	U	YES	78.8	100.7	101.0	96.0	2.2	98.3	0.23	0.31
784448	RBH01	Not Given	7.25	7.36	C	Brown SANDSTONE	WC = 9.6%	1	D	U	YES	66.8	101.0	101.0	97.0	1.1	99.0	0.11	0.15
784449	RBH01	Not Given	8.00	8.20	C	Greyish brown mottled light brown SANDSTONE	WC = 7.1%	1	D	U	YES	70.4	101.4	102.0	99.0	0.7	100.2	0.07	0.10
784451	RBH01	Not Given	9.59	9.67	C	Brown SANDSTONE	WC = 7.9%	1	D	U	YES	53.5	101.1	101.0	97.0	2.4	99.0	0.24	0.33
784452	RBH01	Not Given	10.56	10.73	C	Brown SANDSTONE	WC = 8.8%	1	D	U	YES	80.3	101.4	102.0	97.0	3.0	99.2	0.30	0.41
784453	RBH01	Not Given	11.05	11.52	C	Orangish brown SANDSTONE	WC = 3.1%	1	D	L	YES	72.8	101.2	101.0	97.0	5.0	99.1	0.50	0.69

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random;
Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P;
Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Equipment No.: i2 4341

Calibration Date: 10/03/2025 - 10/03/2026

Comments: Replaces Analytical Report Number 25-067968, issue no 1; Additional results of Point Load (samples: 784446, 784453)

Signed:

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

DETERMINATION OF POINT LOAD STRENGTH

Tested in Accordance with: ISRM: 2007, pages 125-132



4041

Client: Curtins

Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester

Contact: Jonathan Provis

Site Address: LFC Academy

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269

Job Number: 25-067968-2

Date Sampled: Not Given

Date Received: 21/11/2025

Date Tested: 07/01 - 16/01/2026

Sampled By: Client - JP

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P kN	Equivalent diameter, De mm	Point Load Strength Index	
		Reference	Depth Top m	Depth Base m	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm			Is MPa	Is(50) MPa
784454	RBH01	Not Given	11.70	11.92	C	Brown SANDSTONE	WC = 8.7%	1	D	U	YES	74.3	100.9	101.0	97.0	1.9	98.9	0.19	0.26
784455	RBH01	Not Given	12.70	12.92	C	Brown SANDSTONE	WC = 7.8%	1	D	U	YES	76.4	100.8	101.0	97.0	2.8	98.9	0.29	0.39
784456	RBH01	Not Given	13.72	13.92	C	Brown SANDSTONE	WC = 8.4%	1	D	U	YES	68.6	101.5	102.0	96.0	2.8	98.7	0.28	0.38
784459	RBH02	Not Given	5.31	5.42	C	Brown SANDSTONE	WC = 7.8%	1	D	U	YES	55.6	101.8	102.0	96.0	3.2	98.8	0.32	0.44
784460	RBH02	Not Given	6.00	6.11	C	Brown SANDSTONE	WC = 8.5%	1	D	U	YES	56.9	101.3	102.0	99.0	3.0	100.2	0.30	0.41
784461	RBH02	Not Given	7.01	7.14	C	Brown SANDSTONE	WC = 8.7%	1	D	U	YES	70.8	101.5	102.0	97.0	3.6	99.2	0.37	0.50
784462	RBH02	Not Given	7.33	7.44	C	Brown SANDSTONE	WC = 9.5%	1	D	U	YES	63.2	101.3	101.0	97.0	1.2	99.1	0.12	0.16
784464	RBH02	Not Given	9.25	9.35	C	Brown SANDSTONE	WC = 9.3%	1	D	U	YES	53.9	101.1	102.0	98.0	3.6	99.6	0.36	0.50
784465	RBH02	Not Given	10.62	10.83	C	Brown SANDSTONE	WC = 7.3%	1	D	U	YES	78.8	101.0	101.0	97.0	4.5	99.0	0.45	0.62
784466	RBH02	Not Given	11.91	12.27	C	Orangish brown SANDSTONE	WC = 8.2%	1	D	L	YES	73.5	101.3	101.0	98.0	4.1	99.6	0.41	0.56

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random;
Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P;
Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Equipment No.: i2 4341

Calibration Date: 10/03/2025 - 10/03/2026

Comments: Replaces Analytical Report Number 25-067968, issue no 1; Additional results of Point Load (sample 784466)

Signed:

Katarzyna Koziel

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

DETERMINATION OF POINT LOAD STRENGTH

Tested in Accordance with: ISRM: 2007, pages 125-132



4041

Client: Curtins

Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester

Contact: Jonathan Provis

Site Address: LFC Academy

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269

Job Number: 25-067968-2

Date Sampled: Not Given

Date Received: 21/11/2025

Date Tested: 07/01 - 16/01/2026

Sampled By: Client - JP

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P kN	Equivalent diameter, De mm	Point Load Strength Index	
		Reference	Depth Top m	Depth Base m	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm			Is MPa	Is(50) MPa
784467	RBH02	Not Given	12.40	12.50	C	Light brown SANDSTONE	WC = 1.7%	1	A	U	YES	-	100.6	82.0	74.0	3.3	97.3	0.35	0.47
784468	RBH02	Not Given	13.00	13.11	C	Brown SANDSTONE	WC = 11.3%	1	A	U	YES	-	100.8	66.0	57.0	2.1	85.5	0.28	0.36
784469	RBH02	Not Given	13.25	13.48	C	Brown SANDSTONE	WC = 8.5%	1	D	U	YES	79.9	101.3	102.0	98.0	3.9	99.6	0.39	0.54
784470	RBH02	Not Given	13.69	14.00	C	Orangish brown SANDSTONE	WC = 8.1%	1	D	L	YES	69.4	101.1	101.0	98.0	2.8	99.5	0.28	0.39
784474	RBH03	Not Given	4.60	4.89	C	Orangish brown SANDSTONE	WC = 10.1%	1	A	U	YES	-	101.1	86.0	81.0	2.9	102.1	0.27	0.38
784475	RBH03	Not Given	5.14	5.25	C	Grey SANDSTONE	WC = 9.9%	1	A	U	YES	-	101.2	38.0	34.0	0.8	66.2	0.17	0.19
784476	RBH03	Not Given	6.97	7.24	C	Light brown SANDSTONE	WC = 9.7%	1	D	U	YES	88.1	101.0	101.0	97.0	2.4	99.0	0.25	0.33
784477	RBH03	Not Given	7.34	7.70	C	Orangish brown SANDSTONE	WC = 11.1%	1	A	U	YES	-	99.5	81.0	77.0	3.7	98.8	0.38	0.52
784478	RBH03	Not Given	8.47	8.59	C	Brown SANDSTONE	WC = 8.3%	1	D	U	YES	76.3	101.2	101.0	98.0	2.3	99.6	0.23	0.31
784479	RBH03	Not Given	9.29	9.50	C	Brown SANDSTONE	WC = 10.5%	1	D	U	YES	81.9	101.2	102.0	98.0	2.0	99.6	0.20	0.27

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random;
Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P;
Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Equipment No.: i2 4341

Calibration Date: 10/03/2025 - 10/03/2026

Comments: Replaces Analytical Report Number 25-067968, issue no 1; Additional results of Point Load (samples: 784470, 784474, 784477)

Signed:

Katarzyna Koziel

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

DETERMINATION OF POINT LOAD STRENGTH

Tested in Accordance with: ISRM: 2007, pages 125-132



4041

Client: Curtins

Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester

Contact: Jonathan Provis

Site Address: LFC Academy

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269

Job Number: 25-067968-2

Date Sampled: Not Given

Date Received: 21/11/2025

Date Tested: 08/01/2026

Sampled By: Client - JP

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P kN	Equivalent diameter, De mm	Point Load Strength Index	
		Reference	Depth Top	Depth Base	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne	W	Dps	Dps'			Is	Is(50)
			m	m															
784480	RBH03	Not Given	10.04	10.19	C	Light grey SANDSTONE	WC = 7.5%	1	D	U	YES	77.4	98.7	100.0	97.0	1.7	97.8	0.17	0.23
784481	RBH03	Not Given	10.58	10.77	C	Light brown SANDSTONE	WC = 5.1%	1	D	U	YES	73.5	101.6	102.0	98.0	2.9	99.8	0.29	0.40
784483	RBH03	Not Given	11.53	11.64	C	Brown SANDSTONE	WC = 6.9%	1	D	U	YES	55.4	100.7	101.0	98.0	3.0	99.4	0.30	0.41
784484	RBH03	Not Given	13.64	13.77	C	Brown SANDSTONE	WC = 5.0%	1	D	U	YES	69.4	100.7	101.0	96.0	3.5	98.3	0.36	0.48
784485	RBH03	Not Given	14.52	14.63	C	Brown SANDSTONE	WC = 10.6%	1	D	U	YES	58.4	101.0	101.0	98.0	1.9	99.5	0.19	0.26
784492	RBH06	Not Given	5.98	6.14	C	Brown SANDSTONE	WC = 13.5%	1	A	U	YES	-	102.3	65.0	49.0	0.3	79.9	0.05	0.06
784493	RBH06	Not Given	7.89	8.00	C	Brown SANDSTONE	WC = 8.7%	1	D	U	YES	56.6	106.7	101.0	97.0	2.4	101.7	0.23	0.32
784495	RBH06	Not Given	8.98	9.09	C	Brown SANDSTONE	WC = 9.7%	1	D	U	YES	60.6	101.7	102.0	99.0	3.6	100.3	0.36	0.49
784496	RBH06	Not Given	9.83	10.05	C	Brown SANDSTONE	WC = 9.7%	1	D	U	YES	84.0	100.5	101.0	95.0	2.8	97.7	0.29	0.40
784497	RBH06	Not Given	11.00	11.13	C	Brown SANDSTONE	WC = 10.9%	1	D	U	YES	73.4	99.8	100.0	97.0	2.1	98.4	0.22	0.29

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random;
Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P;
Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Equipment No.: i2 4341

Calibration Date: 10/03/2025 - 10/03/2026

Comments:

Signed:

Katarzyna Koziel

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

DETERMINATION OF POINT LOAD STRENGTH

Tested in Accordance with: ISRM: 2007, pages 125-132



4041
Client: Curtins
Client Address: Merchant Exchange, 17-19 Whitworth Street West, Manchester
Contact: Jonathan Provis
Site Address: LFC Academy
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269
Job Number: 25-067968-2
Date Sampled: Not Given
Date Received: 21/11/2025
Date Tested: 08/01 - 16/01/2026
Sampled By: Client - JP

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks (including water content if measured)	Specimen Reference	Test Type see ISRM		Failure Valid (Y/N)	Dimensions				Force P kN	Equivalent diameter, De mm	Point Load Strength Index	
		Reference	Depth Top m	Depth Base m	Type				Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm			Is MPa	Is(50) MPa
784498	RBH06	Not Given	12.37	12.50	C	Brown SANDSTONE	WC = 9.1%	1	D	U	YES	71.3	101.7	102.0	96.0	3.7	98.8	0.37	0.51
784500	RBH06	Not Given	14.09	14.21	C	Brown SANDSTONE	WC = 11.1%	1	D	U	YES	62.7	100.4	101.0	96.0	3.5	98.2	0.36	0.49
784499	RBH06	Not Given	14.10	14.40	C	Orangish brown SANDSTONE	WC = 11.6%	1	D	U	YES	69.4	100.5	101.0	97.0	2.5	98.7	0.26	0.35
784501	RBH06	Not Given	14.71	14.85	C	Brown SANDSTONE	WC = 10.6%	1	D	U	YES	77.9	101.7	102.0	99.0	3.1	100.3	0.31	0.42

Note: # non accredited; Test Type: D - Diametral, A - Axial, I - Irregular Lump, B - Block; Direction: L - parallel to planes of weakness, P - perpendicular to planes of weakness, U - unknown or random;
Dimensions: Dps - Distance between platens (platen separation), Dps' - at failure (see ISRM note 6), Lne - Length from platens to nearest free end W - Width of shortest dimension perpendicular to load, P;
Detailed legend for test and dimensions, based on ISRM, is shown above; Size factor, F = (De/50)0.45 for all tests

Equipment No.: i2 4341 Calibration Date: 10/03/2025 - 10/03/2026

Comments: Replaces Analytical Report Number 25-067968, issue no 1; Additional results of Point Load (sample: 784499)

Signed: Katarzyna Koziel
Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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SUMMARY REPORT

DETERMINATION OF UNIAXIAL COMPRESSIVE STRENGTH OF ROCK MATERIALS

Tested in Accordance with: ISRM, 2007, p153, part 1



4041

Client: Curtins

Client Address: Merchant Exchange, 17-19 Whitworth Street West,
Manchester

Contact: Jonathan Provis

Site Address: LFC Academy

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Client Reference: 88269

Job Number: 25-067968-2

Date Sampled: Not Given

Date Received: 21/11/2025

Date Tested: 07/01/2026

Sampled By: Client - JP

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Specimen Dimensions (2)				Bulk density (2)	Water Content (1)	Uniaxial Compression (3)			
		Reference	Depth Top	Depth Base	Type			Diameter	Length	H/D	Orientation of sample			Condition	Stress Rate	Mode of failure	UCS
			m	m													
784450	RBH01	Not Given	8.47	9.04	C	Brown SANDSTONE		100.8	255.6	2.5	Vertical	2.14	7.4	as received	0.0250	AC	12.9
784463	RBH02	Not Given	8.55	8.89	C	Brown SANDSTONE		101.3	287.8	2.8	Vertical	2.12	8.6	as received	0.0372	MS	14.9
784482	RBH03	Not Given	11.08	11.40	C	Brown SANDSTONE		101.3	264.3	2.6	Vertical	2.18	9.6	as received	0.0248	MS	14.1
784486	RBH03	Not Given	15.20	15.50	C	Brown mottled yellowish brown SANDSTONE		100.3	275.5	2.7	Vertical	2.19	10.0	as received	0.0380	MS	19.9
784494	RBH06	Not Given	8.17	8.57	C	Brown SANDSTONE		101.8	282.7	2.8	Vertical	2.16	9.0	as received	0.0246	MS	11.7
784502	RBH06	Not Given	15.08	15.50	C	Brown SANDSTONE		101.6	276.3	2.7	Vertical	2.15	10.9	as received	0.0370	MS	17.5

Note: 1 - ISRM p87 test 1, water content at 105 ± 3 °C, specimen as tested for UCS, 2 - ISRM p86 clause (vii), Caliper method used for determination of bulk volume and derivation of bulk density, 3 - ISRM p153 part 1, determination of Uniaxial Compressive Strength (UCS) of Rock Materials, above notes apply unless annotated otherwise in the remarks. Compaction machine: VJ Tech AUTOCON - VJT 51-3011; Mode of failure legend: S - Single shear, MS - multiple shear, AC - Axial cleavage, F - Fragmented

Comments:

Signed:

Katarzyna Koziel

Katarzyna Koziel
Geotechnical Reporting Team Leader
for and on behalf of i2 Analytical Ltd

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Appendix E – Ground Gas Monitoring Results

Curtins

Merchant Exchange, 17-19 Whitworth Street West, Manchester, M1 5WG

Tel: 0161 236 2394

Fax: 0161 228 7902

**GAS MONITORING LOG SHEET****Project:** LFC Academy**Date:** 01/12/2025**Job Number:** 88269**Visit:** 1**Client:** Liverpool FC**Weather:** Rain**Barometric State:** Rising**Ground Conditions:** Wet

Borehole Reference	Barometric Pressure mb	Flow l/hr		Methane %		Carbon Dioxide %		Oxygen %	Hydrogen Sulphide ppm	Carbon Monoxide ppm	PID	Water Level m bgl	Borehole Base m bgl	Note
		Max	SS	Max	SS	Max	SS							
RBH01	987	0.0	0.0	0.0	0.0	1.5	1.5	10.5	0	0	1.0	1.35	1.57	1
RBH02	987	0.0	0.0	0.0	0.0	0.1	0.1	20.0	0	0	1.0	2.40	8.84	
RBH03	998	0.6	0.0	0.0	0.0	0.6	0.6	20.0	0	0	1.0	3.84	15.51	
RBH04	987	0.0	0.0	0.0	0.0	10.7	10.7	0.0	0	0	1.0	2.01	2.30	
RBH05	988	0.0	0.0	0.0	0.0	1.8	1.8	17.7	0	0	1.0	0.88	1.56	2
RBH06	-	-	-	-	-	-	-	-	-	-	-	2.40	3.17	
WS01	-	-	-	-	-	-	-	-	-	-	-	2.07	3.07	2
WS02	987	0.0	0.0	0.3	0.3	7.6	7.6	3.5	0	0	1.1	3.15	3.17	

Notes**Logged by**

1 Steady state gas flow rate of 0 achieved instantly

JP

2 Well Flooded

*1% gas volume = 10,000 ppm**Flow rate, methane and carbon dioxide reported as 'maximum' (max) and 'steady state' (SS) readings.**All other gases recorded at 'steady state' unless otherwise stated*

Curtins

Merchant Exchange, 17-19 Whitworth Street West, Manchester, M1 5WG

Tel: 0161 236 2394

Fax: 0161 228 7902

Curtins**GAS MONITORING LOG SHEET****Project:** LFC Academy**Date:** 11/12/2025**Job Number:** 88269**Visit:** 2**Client:** Liverpool FC**Weather:** Sunny**Barometric State:** Falling**Ground Conditions:** Damp

Borehole Reference	Barometric Pressure mb	Flow l/hr		Methane %		Carbon Dioxide %		Oxygen %	Hydrogen Sulphide ppm	Carbon Monoxide ppm	PID	Water Level m bgl	Borehole Base m bgl	Note
		Max	SS	Max	SS	Max	SS							
RBH01	1009	0.0	0.0	0.0	0.0	2.4	2.4	5.30	0	0	1.0	1.4	1.55	1
RBH02	1009	3	0	0	0	0.3	0.2	19.9	0	0	1.0	3.62	8.84	
RBH03	1009	0.0	0.0	0.0	0.0	0.9	0.9	19.70	0	0	1.0	3.79	15.50	
RBH04	1009	0.4	0.0	0.0	0.0	11.3	11.3	0.10	0	0	1.0	1.89	2.31	2
RBH05	1009	0.0	0.0	0.0	0.0	0.8	0.4	19.90	0	0	1.0	0.93	1.50	3
RBH06	1008	-13.5	0.0	5.8	5.6	7.2	7.2	0.00	50	170	4.5	2.85	2.95	
WS01	1009	0.0	0.0	1.2	1.2	7.4	7.4	0.00	0	0	1.6	2.84	3.05	
WS02	1009	0.0	0.0	0.0	0.0	0.8	0.2	19.80	0	0	1.0	3	3.15	

Notes

- 1 Steady state gas flow rate of 0 achieved instantly
- 2 Steady state gas flow rate of 0 achieved after 2 seconds
- 3 Steady state gas flow rate of 0 achieved after 2 minutes

Logged by

JP

1% gas volume = 10,000 ppm

Flow rate, methane and carbon dioxide reported as 'maximum' (max) and 'steady state' (SS) readings.

All other gases recorded at 'steady state' unless otherwise stated

Curtins

Merchant Exchange, 17-19 Whitworth Street West, Manchester, M1 5WG

Tel: 0161 236 2394

Fax: 0161 228 7902



GAS MONITORING LOG SHEET

Project: LFC Academy**Date:** 16/12/2025**Job Number:** 88269**Visit:** 3**Client:** Liverpool FC**Weather:** Sunny**Barometric State:** Rising**Ground Conditions:** Wet

Borehole Reference	Barometric Pressure mb	Flow l/hr		Methane %		Carbon Dioxide %		Oxygen %	Hydrogen Sulphide ppm	Carbon Monoxide ppm	PID	Water Level m bgl	Borehole Base m bgl	Note
		Max	SS	Max	SS	Max	SS							
RBH01	1007	0.5	0.0	0.0	0.0	2.3	2.3	4.1	0	0	1	1.12	1.56	1
RBH02	1007	0.0	0.0	0.0	0.0	0.3	0.2	19.9	0	0	1	3.56	8.84	
RBH03	1008	14.9	0.0	0.0	0.0	1.2	1.2	19.7	0	0	1	3.70	15.50	2
RBH04	1007	0.0	0.0	0.0	0.0	8.4	3.4	14.5	0	0	1	1.77	2.25	
RBH05	1008	0.0	0.0	0.0	0.0	0.4	0.2	20.2	0	0	1	0.83	1.50	
RBH06	1007	-18.2	0.0	4.2	4.2	8.9	8.9	0.0	50	182	1.6	2.88	2.95	3
WS01	1007	0.0	0.0	0.0	0.0	7.3	7.3	0.3	0	0	1	2.92	3.06	
WS02	1007	0.0	0.0	0.0	0.0	0.4	0.2	19.9	0	0	1	3.08	3.14	

Notes**Logged by**

- 1 Steady state gas flow rate of 0 achieved instantly
- 2 Steady state gas flow rate of 0 achieved after 4 minutes
- 3 Steady state gas flow rate of 0 achieved after 2 minutes and 30 seconds

JP

1% gas volume = 10,000 ppm

Flow rate, methane and carbon dioxide reported as 'maximum' (max) and 'steady state' (SS) readings.

All other gases recorded at 'steady state' unless otherwise stated

Curtins

Merchant Exchange, 17-19 Whitworth Street West, Manchester, M1 5WG

Tel: 0161 236 2394

Fax: 0161 228 7902



GAS MONITORING LOG SHEET

Project: LFC Academy**Date:** 06/01/2026**Job Number:** 88269**Visit:** 4**Client:** Liverpool FC**Weather:** Snowing**Barometric State:** Falling**Ground Conditions:** Snow

Borehole Reference	Barometric Pressure mb	Flow l/hr		Methane %		Carbon Dioxide %		Oxygen %	Hydrogen Sulphide ppm	Carbon Monoxide ppm	PID	Water Level m bgl	Borehole Base m bgl	Note
		Max	SS	Max	SS	Max	SS							
RBH01														1
RBH02	1009	0.0	0.0	0.0	0.0	0.7	0.6	19.7	0	0	1.0	3.56	8.94	
RBH03	1009	0.0	0.0	0.0	0.0	2.8	2.8	18.6	0	0	1.0	3.70	15.50	
RBH04	1009	0.0	0.0	0.0	0.0	2.3	2.0	15.5	0	0	1.0	2.14	2.34	
RBH05	1009	0.0	0.0	0.0	0.0	0.9	0.8	19.1	0	0	1.0	1.13	1.49	
RBH06														2
WS01	1010	0.0	0.0	0.0	0.0	7.4	7.4	0.4	0	0	1.0	2.98	3.06	
WS02	1010	0.0	0.0	0.0	0.0	3.1	3.0	11.8	0	0	1.0	3.15	3.17	

Notes**Logged by**

1 Borehole flooded and surrounded by ice which could not be broken.

RBJ

2 Could not locate under the snow.

1% gas volume = 10,000 ppm

Flow rate, methane and carbon dioxide reported as 'maximum' (max) and 'steady state' (SS) readings.

All other gases recorded at 'steady state' unless otherwise stated

Appendix F - GAC Screening Thresholds

Human Health GQRA Rationale and Hierarchy

Background

Detailed guidance on human health risk assessment is available within several documents, published by both the Environment Agency, Defra, CL:AIRE, LQM/CIEH and Public Health England as referenced below (references a-h).

A Generic Quantitative Risk Assessment (GQRA) is carried out for the Potential Contaminant Linkages (PCLs) investigated by screening of soil contamination data against relevant Generic Assessment Criteria where available.

Generic Assessment Criteria are available for a range of different land use scenarios, soil organic matter (SOM) and soil types. Curtins have adopted available GACs for a sandy loam soil at 1%, 2.5% and 6% SOM using various sources.

GAC Hierarchy

A summary of and hierarchy for adopted GACs is identified below:

- i) **Category 4 Screening Levels (C4SLs):** In March 2014 Defra published C4SLs for arsenic, benzene, benzo(a)pyrene, cadmium, hexavalent chromium, and lead as part of the 'Phase 1 Project'. These values were derived to support the revised Part 2A Statutory Guidance issued in 2012 in which four categories of contaminated land are included, ranging from Category 1 (significant/high risk) to Category 4 (low risk). In 2018 the 'Phase 2 Project' commenced which aims to develop C4SLs for a range of further contaminants. Currently available Phase 2 C4SLs include vinyl chloride, trichloroethene, tetrachloroethene, naphthalene, cis-1,2 dichloroethene, trans 1, 2 dichloroethene and per / polyfluoroalkyl substances (PFAS) . Where contaminant concentrations do not exceed C4SLs, there is no risk that the land poses a significant possibility of significant harm (SPoSH) or the level of risk is low, as such land can be demonstrated to be in Category 4 and cannot be determined as contaminated land. The C4SLs are proposed to be more pragmatic (whilst still strongly precautionary) in comparison with SGVs and S4UL's outlined below.
- ii) **Suitable for Use Levels (S4ULs):** In 2015 LQM and the Chartered Institute of Environmental Health published generic assessment criteria for 89 substances including metals, BTEX, TPH, polycyclic aromatic hydrocarbons, phenols, chlorinated solvents and other volatile organic compounds. The S4ULs represent a minimal risk to long term human health, derived using health criteria values. The methodology for deriving the S4ULs is based on the Environment Agency CLEA model with consideration of developments in UK human health exposure assessment, in particular the additional land uses and exposure assumptions.
- iii) **Other Supplementary Screening Criteria:** In addition to those developed by LQM/CIEH (outlined above), other third party organisations have derived SSVs for a wider range of contaminants and land uses using the CLEA Model. Curtins have adopted these numbers where applicable, including those developed EIC/AGS/CL:AIRE and SoBRA published thresholds.

Alternative Assessment Approaches

PAH – Benzo(a)pyrene Surrogate Marker Assessment

In September 2017 Public Health England (PHE) (Ref. h) published guidance for the use of a surrogate marker approach to assess the risk posed by soil contamination with the genotoxic polycyclic aromatic hydrocarbons (PAHs). The guidance indicates that the use of a marker compound, such as Benzo(a)pyrene, provides a consistent indicator of the amount of 7 other genotoxic PAHs commonly tested for in soil including benz(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(123cd)pyrene and benzo(ghi)perylene.

Where PAH concentrations of these 8 no. PAHs are present within pre-determined ratios in soil, provided in the guidance, this approach is used, comparing soil concentrations of the marker compound with a Category 4 Screening Level, or site specific assessment criteria. An individual compound assessment is carried out for other PAH compounds not considered in the PHE guidance.

An individual compound assessment is carried out for all PAH compounds where pre-determined ratios are not met for the surrogate marker approach.

Notes

Curtins Generic Assessment Criteria provide further information and notes to be read in conjunction with this assessment rationale.

Human Health GQRA Rationale and Hierarchy



References

- a) Environmental Agency. (2009) Contaminated Land Exposure Assessment (CLEA) v1.071 model.
- b) Environment Agency. (2009) Human Health Toxicological Assessment of Contaminants in Soil (report no. SC050021/SR2).
- c) Environment Agency. (2009) Updated Technical Background to the CLEA Model (report no.SC050021/SR3).
- d) Environment Agency (2005) The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils Science Report P5-080/TR3.
- e) Department of Environment Food and Rural Affairs (DEFRA). (2012) Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (report no. PB13735).
- f) CL:AIRE (2014) Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, SP1010 Rev 2.
- g) LQM & CIEH (2015) S4ULs for Human Health Risk Assessment.
- h) Public Health England (2017) Contaminated Land Information Sheet: Risk Assessment Approaches for Polycyclic Aromatic Hydrocarbons (PAHs)

Contaminants	Residential with Home Grown Produce	Residential Without Home Grown Produce	Allotments	Commercial	Public open space (Residential)	Public park POS _{park}	Solubility Saturation Limit (mg/kg)	Vapour Satuation Limit (mg/kg)
Metals, Semi-Metals & non-metals								
Antimony	-	550	-	7500	-	-		
Arsenic	37	40	49	640	79	170		
Beryllium	1.7	1.7	35	12	2.2	63		
Boron	290	11000	45	240000	21000	46000		
Cadmium	22	150	3.9	410	220	880		
Chromium III	910	910	18000	8600	1500	33000		
Chromium VI	21	21	170	49	21	250		
Copper	2400	7100	520	68000	12000	44000		
Lead	200	310	80	2300	630	1300		
Mercury (elemental)	1.2	1.2	21	58	16	30		25.8
Mercury (inorganic)	40	56	19	1100	120	240		
Methylmercury	11	15	6	320	40	68		
Nickel	130	180	53	980	230	800		
Selenium	250	430	88	12000	1100	1800		
Vanadium	410	1200	91	9000	2000	5000		
Zinc	3700	40000	620	730000	81000	170000		
Inorganic Compounds								
Cyanide	24	24	24	1400	24	24		
Organic contaminants								
Aliphatic Risk Banded Hydrocarbons - TPH CWG method								
Aliphatic EC5 - EC6 TPHs	42	42	730	3200	570000	95000	304	
Aliphatic EC>6 - EC8 TPHs	100	100	2300	7800	600000	150000	144	
Aliphatic EC>8 - EC10 TPHs	27	27	320	2000	13000	14000	78	
Aliphatic EC>10-EC12 TPHs	130	130	2200	9700	13000	21000	48	
Aliphatic EC>12-EC16 TPHs	1100	1100	11000	59000	13000	25000	24	
Aliphatic EC>16 - EC35 TPHs	65000	65000	260000	1600000	250000	450000	8.48	
Aliphatic EC>35 - EC44 TPHs	65000	65000	260000	1600000	250000	450000	8.48	
Aromatic Risk Banded Hydrocarbons - TPH CWG method								
Aromatic EC5 - EC7 TPHs	70	370	13	26000	56000	76000	1220	
Aromatic EC>7 - EC8 TPHs	130	860	22	56000	56000	87000		869
Aromatic EC>8 - EC10 TPHs	34	47	8.6	3500	5000	7200		613
Aromatic EC10 - EC12 TPHs	74	250	13	16000	5000	9200	364	
Aromatic EC12 - EC16 TPHs	140	1800	23	36000	5100	10000	169	
Aromatic EC>16 - EC21 TPHs	260	1900	46	28000	3800	7600		
Aromatic EC>21 - EC35 TPHs	1100	1900	370	28000	3800	7800		
Aromatic EC>35 - EC44 TPHs	1100	1900	370	28000	3800	7800		
Long Chain Aliphatic and Aromatic Hydrocarbons								
Aliphatic and Aromatic EC >44-70	1600	1900	1200	28000	3800	7800		
Aromatic Hydrocarbons								
Benzene	0.2	0.89	0.039	27	140	190		
Ethyl benzene	47	83	16	5700	24000	17000		518
Toluene	130	880	22	56000	56000	87000		869
Xylene	56	79	28	5900	41000	17000	478 (o-xylene) 576 (p-xylene)	625 (m-xylene)
MTBE	49	73	23	7900			20400	
Phenol	280	750	66	760	760	760		
Polycyclic Aromatic Hydrocarbons (PAH) - Benzo(a)pyrene Surrogate Marker Approach, with reference to C4SL PAH Surrogate Marker Check Sheet where appropriate								
Benzo(a)Pyrene (C4SL Surrogate Marker Approach)	5	5.3	5.7	77	10	21		
Naphthalene	15	15	65	1600	11000	800	76.4	
Acenaphthylene	170	2900	28	83000	15000	29000	86.1	
Acenaphthene	210	3000	34	84000	15000	29000	57	
Fluorene	170	2800	27	63000	9900	20000	30.9	
Phenanthrene	95	1300	15	22000	3100	6200	36	
Anthracene	2400	31000	380	520000	74000	150000		1.17
Fluoranthene	280	1500	52	23000	3100	6300		
Pyrene	620	3700	110	54000	7400	15000		
Polycyclic Aromatic Hydrocarbons (PAH) - Individual Compound Assessment								
Naphthalene	15	15	65	1600	11000	800	76.4	
Acenaphthylene	170	2900	28	83000	15000	29000	86.1	
Acenaphthene	210	3000	34	84000	15000	29000	57	
Fluorene	170	2800	27	63000	9900	20000	30.9	
Phenanthrene	95	1300	15	22000	3100	6200	36	
Anthracene	2400	31000	380	520000	74000	150000		1.17
Fluoranthene	280	1500	52	23000	3100	6300		
Pyrene	620	3700	110	54000	7400	15000		
Benzo(a)anthracene	7.2	11	2.9	170	29	49		
Chrysene	15	30	4.1	350	57	93		
Benzo(b)fluoranthene	2.6	3.9	0.99	44	7.1	13		
Benzo(k)fluoranthene	77	110	37	1200	190	370		
Benzo(a)pyrene (only)	2.2	3.2	0.97	35	5.7	11		
Indeno(123cd)pyrene	27	45	9.5	500	82	150		
Dibenzo(ah)anthracene	0.24	0.31	0.14	3.5	0.57	1.1		
Benzo(ghi)perylene	320	360	290	3900	640	1400		
Chlorinated Aliphatic Hydrocarbons								
Chloroethene (Vinyl chloride)	0.0064	0.015	0.0017	1.1	7.8	18		
1,1-Dichloroethene (DCE)	0.23	0.23	2.8	26			2230	
Cis 1,2, Dichloroethene (DCE)	0.46	0.5	0.89	38	3800	2800	3940	
Trans 1,2, Dichloroethene (DCE)	0.9	0.93	3.7	69	13000	5600	3420	
Trichloroethene (TCE)	0.0093	0.0097	0.032	0.73	76	41		
Tetrachloroethene (PCE)	0.31	0.32	2	24	3200	1400		
1,1,1,2 Tetrachloroethane	1.2	1.5	0.79	110	1400	1500		
1,1,1 Trichloroethane	8.8	9	48	660	140000	57000		1425
1,2-Dichloroethane (Ethylene Dichloride)	0.11	0.16	0.054	12	300	300		
Tetrachloromethane	0.026	0.026	0.45	2.9	890	190		
Trichloromethane (Chloroform)	0.91	1.2	0.42	99	2500	2600		
Per- and Polyfluoroalkyl Substances (PFAS)								
Perfluorooctanoic Acid (PFOA)	0.0076	0.041	0.0014	0.6	0.079	0.17		
Perfluorononanoic Acid (PFNA)	0.013	0.041	0.0027	0.6	0.079	0.17		
Perfluorohexane Sulfonic Acid (PFHxS)	0.0081	0.041	0.0015	0.6	0.079	0.17		
Perfluorooctane Sulfonic Acid (PFOS)	0.0073	0.041	0.0013	0.6	0.079	0.17		

Contaminants	Residential with Home Grown Produce	Residential Without Home Grown Produce	Allotments	Commercial	Public open space (Residential)	Public park POS _{park}	Solubility Saturation Limit (mg/kg)	Vapour Satuation Limit (mg/kg)
Metals, Semi-Metals & non-metals								
Antimony		550		7500				
Arsenic	37	40	49	640	79	170		
Beryllium	1.7	1.7	35	12	2.2	63		
Boron	290	11000	45	240000	21000	46000		
Cadmium	22	150	3.9	410	220	880		
Chromium III	910	910	18000	8600	1500	33000		
Chromium VI	21	21	170	49	21	250		
Copper	2400	7100	520	68000	12000	44000		
Lead	200	310	80	2300	630	1300		
Mercury (elemental)	1.2	1.2	21	58	16	30		25.8
Mercury (inorganic)	40	56	19	1100	120	240		
Methylmercury	11	15	6	320	40	68		
Nickel	130	180	53	980	230	800		
Selenium	250	430	88	12000	1100	1800		
Vanadium	410	1200	91	9000	2000	5000		
Zinc	3700	40000	620	730000	81000	170000		
Inorganic Compounds								
Cyanide	24	24	24	1400	24	24		
Organic contaminants								
Aliphatic Risk Banded Hydrocarbons - TPH CWG method								
Aliphatic EC5 - EC6 TPHs	78	78	1700	5900	590000	130000	558	
Aliphatic EC>6 - EC8 TPHs	230	230	5600	17000	610000	220000	322	
Aliphatic EC>8 - EC10 TPHs	65	65	770	4800	13000	18000		190
Aliphatic EC>10-EC12 TPHs	330	330	4400	23000	13000	23000		118
Aliphatic EC>12-EC16 TPHs	2400	2400	13000	82000	13000	25000	59	
Aliphatic EC>16 - EC35 TPHs	92000	92000	270000	1700000	250000	480000	21	
Aliphatic EC>35 - EC44 TPHs	92000	92000	270000	1700000	250000	480000	21	
Aromatic Risk Banded Hydrocarbons - TPH CWG method								
Aromatic EC5 - EC7 TPHs	140	690	27	46000	56000	84000	2260	
Aromatic EC>7 - EC8 TPHs	290	1800	51	110000	56000	95000	1920	
Aromatic EC>8 - EC10 TPHs	83	110	21	8100	5000	8500		1500
Aromatic EC10 - EC12 TPHs	180	590	31	28000	5000	9700	899	
Aromatic EC12 - EC16 TPHs	330	2300	57	37000	5100	10000	419	
Aromatic EC>16 - EC21 TPHs	540	1900	110	28000	3800	7700		
Aromatic EC>21 - EC35 TPHs	1500	1900	820	28000	3800	7800		
Aromatic EC>35 - EC44 TPHs	1500	1900	820	28000	3800	7800		
Long Chain Aliphatic and Aromatic Hydrocarbons								
Aliphatic and Aromatic EC >44-70	1800	1900	2100	28000	3800	7800		
Aromatic Hydrocarbons								
Benzene	0.17	0.7	0.034	47	72	100		
Ethyl benzene	110	190	39	13000	24000	22000		1220
Toluene	290	1900	51	110000	56000	95000		1920
Xylene	130	180	67	14000	42000	23000	1120	1470
MTBE	84	120	44	13000			33100	
Phenol	550	1300	140	1500	1500	1500		
Polycyclic Aromatic Hydrocarbons (PAH) - Benzo(a)pyrene Surrogate Marker Approach, with reference to C4SL PAH Surrogate Marker Check Sheet where appropriate								
Benzo(a)Pyrene (C4SL Surrogate Marker Approach)	5	5.3	5.7	77	10	21		
Naphthalene	36	36	130	3700	15000	1200	183	
Acenaphthylene	420	4600	69	97000	15000	30000	212	
Acenaphthene	510	4700	85	97000	15000	30000	141	
Fluorene	400	3800	67	68000	9900	20000	76.5	
Phenanthrene	220	1500	38	22000	3100	6200		
Anthracene	5400	35000	950	540000	74000	150000		
Fluoranthene	560	1600	130	23000	3100	6300		
Pyrene	1200	3800	270	54000	7400	15000		
Polycyclic Aromatic Hydrocarbons (PAH) - Individual Compound Assessment								
Naphthalene	36	36	130	3700	15000	1200	183	
Acenaphthylene	420	4600	69	97000	15000	30000	212	
Acenaphthene	510	4700	85	97000	15000	30000	141	
Fluorene	400	3800	67	68000	9900	20000	76.5	
Phenanthrene	220	1500	38	22000	3100	6200		
Anthracene	5400	35000	950	540000	74000	150000		
Fluoranthene	560	1600	130	23000	3100	6300		
Pyrene	1200	3800	270	54000	7400	15000		
Benzo(a)anthracene	11	14	6.5	170	29	56		
Chrysene	22	31	9.4	350	57	110		
Benzo(b)fluoranthene	3.3	4	2.1	44	7.2	15		
Benzo(k)fluoranthene	93	110	75	1200	190	410		
Benzo(a)pyrene (only)	2.7	3.2	2	35	5.7	12		
Indeno(123cd)pyrene	36	46	21	510	82	170		
Dibenzo(ah)anthracene	0.28	0.32	0.27	3.6	0.57	1.3		
Benzo(ghi)perylene	340	360	470	4000	640	1500		
Chlorinated Aliphatic Hydrocarbons								
Chloroethene (Vinyl chloride)	0.01	0.019	0.0031	1.4	7.8	19		
1,1-Dichloroethene (DCE)	0.4	0.41	5.6	46			3940	
Cis 1,2, Dichloroethene (DCE)	0.78	0.84	1.7	64	3800	2400	6610	
Trans 1,2, Dichloroethene (DCE)	1.6	1.7	0.75	120	13000	7000	6170	
Trichloroethene (TCE)	0.02	0.02	0.072	1.5	78	54		
Tetrachlorethene (PCE)	0.7	0.71	4.8	55	3300	1900		
1,1,1,2 Tetrachlorethane	2.8	3.5	1.9	250	1400	1800		
1,1,1 Trichlorethane	18	18	110	1300	140000	76000		2915
1,2-Dichloroethane (Ethylene Dichloride)	0.18	0.24	0.1	17	210	330		
Tetrachloromethane	0.056	0.056	1	6.3	920	270		
Trichloromethane	1.7	2.1	0.83	170	2500	2800		
PFAS								
Perfluorooctanoic Acid (PFOA)	0.0076	0.041	0.0014	0.6	0.079	0.17		
Perfluorononanoic Acid (PFNA)	0.013	0.041	0.0027	0.6	0.079	0.17		
Perfluorohexane Sulfonic Acid (PFHxS)	0.0081	0.041	0.0015	0.6	0.079	0.17		
Perfluorooctane Sulfonic Acid (PFOS)	0.0073	0.041	0.0013	0.6	0.079	0.17		

Contaminants	Residential with Home Grown Produce	Residential Without Home Grown Produce	Allotments	Commercial	Public open space (Residential)	Public park POS _{park}	Solubility Saturation Limit (mg/kg)	Vapour Satuation Limit (mg/kg)
Metals, Semi-Metals & non-metals								
Antimony		550		7500				
Arsenic	37	40	49	640	79	170		
Beryllium	1.7	1.7	35	12	2.2	63		
Boron	290	11000	45	240000	21000	46000		
Cadmium	22	150	3.9	410	220	880		
Chromium III	910	910	18000	8600	1500	33000		
Chromium VI	21	21	170	49	21	250		
Copper	2400	7100	520	68000	12000	44000		
Lead	200	310	80	2300	630	1300		
Mercury (elemental)	1.2	1.2	21	58	16	30		25.8
Mercury (inorganic)	40	56	19	1100	120	240		
Methylmercury	11	15	6	320	40	68		
Nickel	130	180	53	980	230	800		
Selenium	250	430	88	12000	1100	1800		
Vanadium	410	1200	91	9000	2000	5000		
Zinc	3700	40000	620	730000	81000	170000		
Inorganic Compounds								
Cyanide	24	24	24	1400	24	24		
Organic Compounds								
Aliphatic Risk Banded Hydrocarbons - TPH CWG method								
Aliphatic EC5 - EC6 TPHs	160	160	3900	12000	600000	180000	1150	
Aliphatic EC>6 - EC8 TPHs	530	530	13000	40000	620000	320000	736	
Aliphatic EC>8 - EC10 TPHs	150	150	1700	11000	13000	21000		451
Aliphatic EC>10-EC12 TPHs	760	770	7300	47000	13000	24000		283
Aliphatic EC>12-EC16 TPHs	4300	4400	13000	90000	13000	26000	142	
Aliphatic EC>16 - EC35 TPHs	110000	110000	270000	1800000	250000	490000		
Aliphatic EC>35 - EC44 TPHs	110000	110000	270000	1800000	250000	490000		
Aromatic Risk Banded Hydrocarbons - TPH CWG method								
Aromatic EC5 - EC7 TPHs	300	1400	57	86000	56000	92000	4710	
Aromatic EC>7 - EC8 TPHs	660	3900	120	180000	56000	100000		4360
Aromatic EC>8 - EC10 TPHs	190	270	51	17000	5000	9300		3590
Aromatic EC10 - EC12 TPHs	380	1200	74	34000	5000	10000	2150	
Aromatic EC12 - EC16 TPHs	660	2500	130	38000	5000	10000		
Aromatic EC>16 - EC21 TPHs	930	1900	260	28000	3800	7800		
Aromatic EC>21 - EC35 TPHs	1700	1900	1600	28000	3800	7900		
Aromatic EC>35 - EC44 TPHs	1700	1900	1600	28000	3800	7900		
Long Chain Aliphatic and Aromatic Hydrocarbons								
Aliphatic and Aromatic EC >44-70	1900	1900	3000	28000	3800	7900		
Aromatic Hydrocarbons								
Benzene	0.87	3.3	0.18	98	140	230		
Ethyl benzene	260	440	91	27000	25000	27000		2840
Toluene	690	3900	120	180000	56000	100000		4360
Xylene	310	430	160	30000	43000	31000	2620	
MTBE	160	220	90	24000			62700	
Phenol	420	2300	280	3200	3200	3200		
Polycyclic Aromatic Hydrocarbons (PAH) - Benzo(a)pyrene Surrogate Marker Approach, with reference to C4SL PAH Surrogate Marker Check Sheet where appropriate								
Benzo(a)Pyrene (C4SL Surrogate Marker Approach)	5	5.3	5.7	77	10	21		
Naphthalene	85	85	200	8400	17000	1900	432	
Acenaphthylene	920	6000	160	100000	15000	30000	506	
Acenaphthene	1100	6000	200	100000	15000	30000	336	
Fluorene	860	4500	160	71000	9900	20000	183	
Phenanthrene	440	1500	90	23000	3100	6300		
Anthracene	11000	37000	2200	540000	74000	150000		
Fluoranthene	890	1600	290	23000	3100	6400		
Pyrene	2000	3800	620	54000	7400	15000		
Polycyclic Aromatic Hydrocarbons (PAH) - Individual Compound Assessment								
Naphthalene	85	85	200	8400	17000	1900	432	
Acenaphthylene	920	6000	160	100000	15000	30000	506	
Acenaphthene	1100	6000	200	100000	15000	30000	336	
Fluorene	860	4500	160	71000	9900	20000	183	
Phenanthrene	440	1500	90	23000	3100	6300		
Anthracene	11000	37000	2200	540000	74000	150000		
Fluoranthene	890	1600	290	23000	3100	6400		
Pyrene	2000	3800	620	54000	7400	15000		
Benzo(a)anthracene	13	15	13	180	29	62		
Chrysene	27	32	19	350	57	120		
Benzo(b)fluoranthene	3.7	4	3.9	45	7.2	16		
Benzo(k)fluoranthene	100	110	130	1200	190	440		
Benzo(a)pyrene (only)	3	3.2	3.5	36	5.7	13		
Indeno(123cd)pyrene	41	46	39	510	82	180		
Dibenzo(ah)anthracene	0.3	0.32	0.43	3.6	0.58	1.4		
Benzo(ghi)perylene	350	360	640	4000	640	1600		
Chlorinated Aliphatic Hydrocarbons								
Chloroethene (Vinyl chloride)	0.017	0.029	0.0058	2.2	7.8	19		
1,1-Dichloroethene (DCE)	0.82	0.82	12	92			7940	
Cis 1,2, Dichloroethene (DCE)	1.5	1.6	3.6	120	3900	3100	12900	
Trans 1,2, Dichloroethene (DCE)	3.3	3.4	16	260	13000	9100	12600	
Trichloroethene (TCE)	0.043	0.045	0.16	3.4	79	69		
Tetrachloroethene (PCE)	1.6	1.6	11	130	3400	2500		
1,1,1,2 Tetrachloroethane	6.4	8.2	4.4	560	1400	2100		
1,1,1 Trichloroethane	39	40	240	3000	140000	100000		6392
1,2-Dichloroethane (Ethylene Dichloride)	0.31	0.41	0.19	29	310	380		
Tetrachloromethane	0.13	0.13	2.4	14	950	400		
Trichloromethane	3.4	4.2	1.7	350	2500	3100		
PFAS								
Perfluorooctanoic Acid (PFOA)	0.0076	0.041	0.0014	0.6	0.079	0.17		
Perfluorononanoic Acid (PFNA)	0.013	0.041	0.0027	0.6	0.079	0.17		
Perfluorohexane Sulfonic Acid (PFHxS)	0.0081	0.041	0.0015	0.6	0.079	0.17		
Perfluorooctane Sulfonic Acid (PFOS)	0.0073	0.041	0.0013	0.6	0.079	0.17		

- 1) All Values are in mg/kg, reported to 2 significant figures.
- 2) Numbers in bold are C4SLs, Numbers in italics are S4ULs, Numbers underlined are EIC/AGS/CL:AIRE GACs, Numbers in red are SoBRA Acute Generic Assessment Criteria.
- 3) Assumptions and key notes made when deriving the Generic Assessment Criteria are contained within the relevant guidance documents, references:
 - a) Contaminated Land: Applications in Real Environments (2014) SP1010 - Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, Final Project Report (Revision 2b)
 - b) Land Quality Management Ltd. (2015) The LQM/CIEH S4ULs for Human Health Risk Assessment.
 - c) CL:AIRE, EIC, AGS (2010) Soil Generic Assessment Criteria for Human Health Risk Assessment.
 - d) Society of Brownfield Risk Assessment (2020) Development of Acute Generic Assessment Criteria for Assessing Risks to Human Health from Contaminants in Soil.
 - e) Environment Agency (2009) Human Health Toxicological Assessment of Contaminants in Soil, Science Report - SC050021/SR2.
- 4) Generic Assessment Criteria listed in the following order of preference: C4SLs, S4ULs, CL:AIRE/AGS/EIC Generic Assessment Criteria, Other relevant Generic Assessment Criteria where GACS associated with the prioritised GACs are not available as outlined further in Curtins Rationale and Hierarchy notes.
- 5) To use Benzo(a)pyrene as a surrogate marker for PAH contamination, the assumptions set out in the relevant C4SL documentation must be met. A C4SL PAH surrogate marker checklist is appended.
- 6) Naphthalene is a volatile PAH. The C4SL values are derived on the basis of chronic exposure and risks to human health, and do not explicitly account for acute risks (e.g. a one off ingestion of a significant amount of soil by a young child) where the inhalation pathway is the main risk driver. Further consideration of the acute risk may be required in external settings (POS_{park} and POS_{resi}) where the GAC is substantially greater than the residential equivalent, to account for the possibility of acute exposure to the ingestion of naphthalene. The theoretical solubility saturation limit of naphthalene in soil is substantially lower than the GAC value, and therefore it is likely that free phase contamination would be present where the GAC is exceeded. In such a situation, it is unlikely that the product would remain in-situ untreated, and consideration of remediation / mitigation methods would be required.
- 7) Where the C4SL surrogate marker checklist indicates the PAH ratios are not suitable, individual PAH compounds must be assessed individually against the relevant contaminant specific assessment criteria.
- 8) Risk associated with additive effects of TPH contamination needs to be assessed in addition to the individual bandings, using the following equation:

$$HI = \sum HQ_i = \sum \frac{\text{Measured concentration, } Fi \text{ (mg/kg)}}{\text{Relevant GAC (mg/kg)}} Fi$$

Where:

HI = Hazard Index

HQ = Hazard Quotient

Fi = Fraction i

Where the HI > 1, there may be a risk to human health.

- 9) Exposure to all xylene isomers to be considered together. Values detailed in this table are the lowest (most conservative) of o-, m- and p- xylene isomers.
- 10) PFAS assessment also uses a hazard index approach to ensure the total exposure from all four PFAS compounds combined does not exceed the LLTC_{oral}. Where the hazard index exceeds 1, further consideration or assessment of the risk is required, even where none of the individual C4SL values are exceeded.
- 11) PFAS C4SL values are interim. The C4SL has been derived using the sum of the four PFAS compounds as the basis of the low level of toxicological concern. The term interim reflects concerns raised by the Committee on Toxicity (COT) and the fact that further work by the COT and others may result in the need for the LLTC to be updated.
- 12) Generic Assessment Criteria assume no free phase contamination is present. Where free phase contamination is present, further assessment may be required.
- 13) Solubility Saturation Limit and Vapour Saturation Limit are provided in accordance with relevant guidance documents. Where these values are exceeded, and the vapour pathway is an important contributing pathway to exposure, then the following should be considered:
 - Free phase contamination may be present
 - Exposure from vapour pathways will be over predicted.
 - Where the vapour pathway is >90% of exposure then it is unlikely that the relevant HCV will be exceeded at soil concentrations at least a factor of ten higher than the relevant HCV.

Additional assessment should be undertaken where this is the case, with consideration that:

- Exposure is unlikely to reach the relevant HCV and the risk based on the assumed conceptual model is likely to be negligible.
- Vapour pathway exposure should be calculated using algorithms suitable for free phase or NAPL sources
- Screening could be considered using the lower saturation limit, which is the approach adopted by the USEPA. However, this may not be practical in many cases because of very low limits and is in any case highly conservative.

Where the vapour pathway is the only exposure pathway considered then effective assessment criteria should be derived manually in accordance with guidance outlined in CLEA Science Report SC050021/SR4

Appendix G – Risk Assessment Rationale

The site-specific risk assessment, presented in this report, follows the principle of establishing whether there is a viable linkage between a contaminant source to a potential receptor, via an exposure pathway.

The risk assessment corresponds with the total site area and incorporates both descriptive (qualitative) and, where available, numerical (quantitative) lines of evidence.

Risk assessment is the process of collating known information on a hazard or set of hazards to estimate actual or potential risk to receptors. The receptor may be humans, a water resource, a sensitive local ecosystem, or future construction materials. Receptors can be connected to the source by one or several exposure pathways such as direct contact for example. Risks are managed by isolating the receptor or intercepting the exposure pathway or by isolating or removing the hazard.

Without the three essential components of a source, pathway, and receptor there can be no risk. Therefore, the presence of contaminant source on a site does not necessarily mean there is a risk.

The risk assessment considers the likelihood of a particular event taking place (accounting for the presence of the source and receptor and the viability of the exposure pathway) in conjunction with the severity of the potential consequence (accounting for the potential severity of the hazard and the sensitivity of the receptor).

In the risk assessment the consequence of the hazard has been classified as severe, medium, mild, or minor and the probability (likelihood) of the circumstances occurring classified as high likelihood or low likelihood or unlikely.

The consequences and probabilities are subsequently cross correlated to give a qualitative estimation of the risk using Department of the Environment risk classifications as detailed in the table below and as referenced in CIRIA C552.

		Consequence			
		Severe	Medium	Mild	Minor
Probability (Likelihood)	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

In accordance with DoE guidance, the following categorisation of **consequence** has been developed.

Classification	Definition	Examples
Severe	Short-term (acute) risk to human health likely to result in “significant harm” as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to an ecosystem or organisation forming part of such ecosystem.	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from site into controlled water. Explosion, causing building collapse (can also equate to a short-term human health risk if buildings are occupied).
Medium	Chronic damage to Human Health. Pollution of sensitive water resources. A significant change in an ecosystem or organism forming part of such ecosystem.	Concentration of a contaminant from site exceeds the generic or site-specific assessment criteria. Leaching of contaminants from a site to a Principal or Secondary A aquifer. Death of a species within a designated nature reserve. Lesser toxic and asphyxiate effects
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures, and services. Damage to sensitive buildings/structures/services or the environment.	Pollution of non-classified groundwater (Inc. Secondary B aquifers). Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
Minor	Harm, although not necessarily significant harm, which may result in a financial loss or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing, etc). Easily repairable effects of damage to buildings, structures, and services.	The presence of contaminants at such concentrations that protective equipment is required during site works. The loss of plants in a landscaping scheme. Discoloration of concrete.

In accordance with DoE guidance, the following categorisation of **probability** has been developed.

Classification	Definition
High Likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and over the long term.
Low Likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place and is less likely in the shorter term.
Unlikely	There is a pollution linkage, but circumstances are such that it is improbable that an event would occur even in the very long term.

In accordance with DoE guidance, the following categorisation of **risk** has been developed.

Classification	Definition
Very High Risk	There is a <i>high probability</i> that <i>severe harm</i> could arise to a designated receptor from an identified hazard at the site without appropriate further action.
High Risk	<i>Harm is likely to arise</i> to a designated receptor from an identified hazard at the site without appropriate further action.
Moderate Risk	<i>It is possible</i> that without appropriate further action <i>harm could arise</i> to a designated receptor. It is relatively <i>unlikely</i> that any such harm would be <i>severe</i> , and if any harm were to occur it is <i>more likely</i> that such harm would be <i>relatively mild</i> .
Low Risk	<i>It is possible</i> that <i>harm could arise</i> to a designated receptor from an identified hazard. It is <i>likely</i> that, at worst, if any harm was realised any effects would be <i>mild</i> .
Negligible Risk	The presence of an identified hazard does not give rise to the potential to cause harm to a designated receptor.

The term 'risk' in this instance refers to the risk that the source, pathway, receptor linkage for a given source of contamination is complete. It does not refer to immediate risk to individuals or features present on the site from potential contaminants and is intended to be used as a tool to assess the necessity of further investigation.